

**SMEDLEY'S  
PRACTICAL  
HYDROPATHY.**

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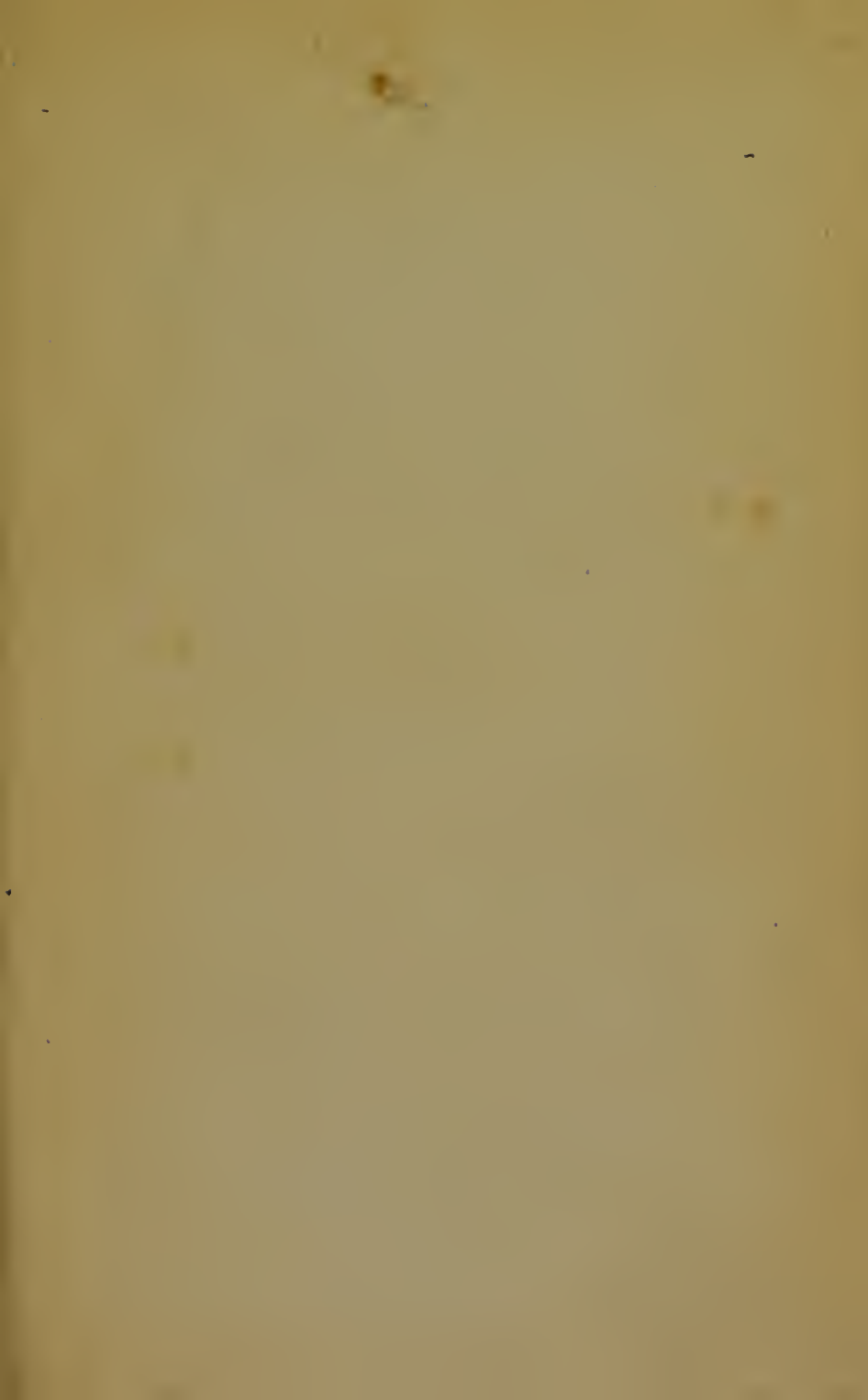
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# PRACTICAL HYDROPATHY.

INCLUDING

PLANS OF BATHS,

AND REMARKS ON

DIET, CLOTHING, AND HABITS OF LIFE.

BY JOHN SMEDLEY,

LEA MILLS, DERBY.

WITH EIGHTY ANATOMICAL ILLUSTRATIONS, AND  
PHYSIOLOGICAL EXPLANATIONS

PRICE ONE SHILLING AND SIXPENCE.

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#### ERRATA.

Page 95, 17th line from the top, *for* sitting baths, 70 deg. or cold fifteen minutes, *read*, the sitz bath should be 80 deg. brought down to 70, fifteen minutes.



Matlock Bath, from the Wild Cat Tor.

FIRST EDITION, 10,000.

June 12, 1857.

HAVING about five years since printed (mostly for gratuitous distribution) an edition of 30,000 of a pamphlet on "Hydropathy, its Application to the Cure and Prevention of Disease," I have frequently been asked to publish another edition, giving the improved methods and the experience we have had, in the treatment of the many hundreds of cases which have passed through our hands, since that pamphlet was published. I have long been desirous of doing this, but the incessant calls upon my time have put it out of my power, and now I can only accomplish my work by using that time which should go to the repose of the body. The many very gratifying testimonials which I have received, both from this country and from other parts of the world, to the usefulness of my former pamphlet, and the valuable improvements we have been enabled to make in the application of Hydropathic treatment, have induced me, now we have taken up our abode for the summer at Riber Hall on Riber Hill, within view of the Hydropathic Establishment at Matlock Bank, to devote some of the early hours of the morning to endeavour, with God's guidance, to make this pamphlet more generally useful. Here—

where the sun at this season has risen high in the heavens at five o'clock, and the chorus of the birds commences still earlier—here, where there is a very extensive and beautifully-varied landscape of mountain, valley, and wood,—there is every inducement to throw off drowsy feelings and rise to work for the glory of God and the benefit of mankind. Sometimes, even in this charming spot, melancholy thoughts will cross the mind, especially when I reflect that many of the former inhabitants of this ancient and beautiful Hall may not have been wise in the day of their pilgrimage, in securing the salvation of their immortal souls by being “born again of water and the spirit,” without which none who have heard the Gospel tidings, the Scriptures say, shall enter the kingdom of heaven. Should there have been such, I sometimes think, when viewing the exquisite panorama of mountains around, how dreadful must be their remorse and self-reproach now, when they reflect that they might have had, by a life of faith and obedience, the blessings of this life and that which is eternal; for all the treasures of earth, and all its beauties and its pleasures are as shadows of happiness in comparison with the great realities in the regions of the blest. May such thoughts and such possibilities quicken the living! Here also is the site of a Druidical temple, the remains of which, on the summit of the hill overlooking Darley Dale, existed a few years since. It is indeed a commanding spot for such a purpose. The mind is led back to the time (probably more than two thousand years ago), when the inhabitants of the surrounding district, far and near, might be seen on the first day of November ascending the steep mountain from all sides, bringing their offerings to the priests and carrying back the sacred fire, to relight their family hearths, which had all been extinguished by the priests’ command the evening before; and no doubt to witness human sacrifices. This worship was put an end to by the Romans, who came into this country B.C. 55; and who, on this hill, in after times, made large fires, when the south wind blew, to smelt the lead ore, so abundant in this locality.

Very frequently my patients have requested me to print my personal experience of Hydropathy, and the reasons which induced me to have a Hydropathic Establishment. I promised to do so when I brought my new pamphlet out, and at the risk of incurring criticism, I now perform my promise. It may seem to some persons presumptuous in me, having had no regular medical education, to write on the curative principles

of any treatment. The very gratifying success of our efforts, however, for the benefit of our fellow creatures, has emboldened me to go on with my work. We may truly say, we have seen so many hundreds restored or relieved, without any serious errors, that we cannot doubt we are in the path God designs us to pursue. Our time, health, and strength, and all the means of a not inconsiderable property, are by us willingly, and even thankfully, devoted to our work, with a single eye to live to the glory of God and for the welfare of mankind. My wish is to encourage others to work and stand by the true principles of the Gospel, and leave the result to God, without any fear of the consequences.

Devoted to a manufacturing business many years, and having accumulated more than sufficient for ordinary wants, it was my intention to manage my business principally by deputy, or retire from it and see foreign countries, making England my home occasionally. The idea of repose and leisure, after labour which few, in my circle, have gone through, was the bright time I had long looked forward to with pleasure; and many a dark fatiguing day has it helped to cheer. A regular attendant at church and the sacrament of the Lord's supper; on terms of close intimacy with those ministers and the laity who had the reputation of being evangelical in their doctrine and practice; self-satisfied with obeying the outward forms of religion, and having the reputation of being both religious and charitable, I believed I was quite justified in looking forward to enjoy the fruits of my labour in ease and self-gratification. "Man proposes and God disposes." We took a journey through France, Germany, and Switzerland; and on our return I was seized with typhus fever. The great varieties of temperature I had gone through, the fatigue, and more than all, the unwholesome food and wine, and malaria, had brought me to the brink of the grave. My doctor visited me on my arrival home; said I was in a bad state; gave me medicines, and told me a short time would develop my complaint. And indeed it was true; instead of our soothing wet sheet envelope, to relieve the parched hot skin, I had only an aggravation in the shape of drugs. Soon the fever rose to madness and delirium; I entreated the doctor to give me something to cool my parched mouth, but all his accumulated knowledge of the London Pharmacopœia, with his certificate of qualification for the treatment of disease, given to him by the examiners of Surgeons'



and Apothecaries' Halls, availed not for my relief. The overruling hand of God, and a healthy constitution carried me through. Once the servant bathed my arms in cold water. I exclaimed, "What a relief!" It was the only agreeable relief I had experienced; but of course only being done locally, it had no control over the fever, which was burning throughout my whole body. I was exhorted to look to Christ for the repose of my mind. I replied, I had no hope. My time of trial was come, and I found no witness in my own heart that I had ever been anything but a formal, professing christian. I soon became insensible to all outward and bodily sensations; but my mind was exquisitely alive to the whole course of my past life. I saw my character clearly, and it was that of a hypocrite; I believed I was shut out from the presence of God for ever; and agreed to the justice of my doom. God mercifully brought me back to outward consciousness. I was long in arriving even at a low state of convalescence; my mind, however, was awakened to the awful folly of living for the gratifications of this life; but how to find peace, I saw not. I had at my baptism been pronounced by the clergyman regenerated, and made God's own child by adoption. I had been made to repeat this in the catechism. I had been "prepared" for "confirmation," and taken before the bishop, who laid his hands upon my head, and in the presence of God and man, solemnly declared I was regenerated, and had then given unto me "the forgiveness of all my sins." I was now supposed to be in a fit state to ratify my belief, by receiving the sacrament of the Lord's supper, which was administered to me by the hands of one of the most highly-esteemed evangelical clergymen of this county. I was not regenerated, however, nor did I feel that my sins were forgiven, or any change of heart or disposition whatever had taken place; the work of spiritual regeneration had yet to be accomplished in me.

In a very few months after being somewhat convalescent, I, with my wife, left home to seek for repose of mind, in travel and change of scene. Some good, sincere, christian workmen in my employ pointed out to me the simple means of gaining peace; I tried it, and failed, because I was yet unacquainted with my own heart. There was yet disappointed ambition, and love of this world's good opinion ruling in it. I found it was indeed a strong man armed keeping the house, and holding me in an iron cage of misery. Travel of course brought no

relief; and in a condition hopeless of life, I was advised to go to a Hydropathic Establishment, which my state of desperation only would have induced me to try. There, in November, worn as I was to a skeleton, and distracted in mind, the bitter cold water treatment aggravated my sufferings at first considerably; when, had I but commenced with our *mild* system, until the body had somewhat recovered its tone, I should have been saved much unnecessary suffering. I had not slept above an hour or so at once for months. After a few weeks at the establishment, I slept pretty well; I got tolerably good functionary action of the stomach, &c., and after nine weeks, returned home. Here, however, old recollections soon threw me down again. I had not yet learned to count all things but loss for the excellency of the knowledge of Christ. In nine months I returned again to the Water Establishment for three months, and regained bodily health, but no relief to my mind. We set out on a tour to Cheltenham; the coast of Devonshire; then to Dover and to France; returned to Malvern, and thence to Cheltenham, where I took No. 11, Suffolk-square, for the winter. I purchased the estate of Rose Hill, near Pittville, then the residence of Admiral King. However, shortly after this, I found peace in believing. I had been labouring a good deal in visiting the poor and schools, and practising self-denial in those things I formerly rejoiced in; determining to seek for happiness in the favour of God, through the merits of my Redeemer, and knocking in humble sincerity, the door was opened to me. I entered the fold, and experienced unbounded joy and confidence. My wife, I was thankful indeed to find, heartily reciprocated my feelings. Then we determined to return amongst our work people, and try to live that life of usefulness God had so graciously laid out for us, but which I had neglected to realise for the vanities and unsatisfying things of this world. Immediately I went by London to Ben Rhydding near Leeds, purposely to kneel down in the room in which I had suffered so much from bodily ailment and despair of mind, to thank God for all his goodness to me, and to dedicate myself and all I possessed to His service.

I returned to Lea Bridge (seventy miles), and sat up part of the night burning my foolish ballads and books, upon which even clergymen had with me often wasted precious time. I locked up my extravagant plate, ornaments, equipage, &c., until I could give them away or sell them

for the benefit of religious societies, which I did shortly after. I then brought my wife from Cheltenham, and we commenced our work. Soon we found we had crosses to take up, when we would no longer comply with the customs of our former circle, in giving or attending dinner or evening parties, and in keeping our house exclusive for a class. We found, however, ample consolation in the peace within, and in the communion of humble and sincere christians. I built five chapels, one church, and two school-rooms in different parts of the country, some, where I had work people. I assisted many poor societies, and worshipped with our own people in our chapel, imposing nothing but the simple word of God on the congregation. It is now about seven years since we embarked on this course, and every year brings more solid peace and joy; and we know it will be thus with us until God shall take us to serve him in a brighter sphere.

On returning home, I took in a few men to try the Hydropathic remedies; they were successful, and more applied. I then established a place for the free board, lodging, and baths of a certain number of males and females, and hundreds have here found restoration to health of body, and peace of mind also, through the renewal of the Spirit. Persons in our own station then applied for advice, seeing such wonderful effects produced, sometimes on their own servants. We did not know where to recommend them to go, as we had little confidence in the mode of treatment pursued at some establishments, which is often indeed the "cold water" practice; some could not afford the expense, (which at all the principal establishments is £20 for the first month) so we made our house a free hospital, until we found we could not afford room enough. I then bought a small house at Matlock Bank for six patients at 3s. per day. Uniform success in the treatment soon brought more; the place was enlarged; soon again had we to refuse applicants; and thus has it grown until at this time there are sixty,\* besides those who have only baths at the establishment. Although I have not had a regular medical education, human physiology has been all my life a study of much interest to me, and I now find the benefit of this early training. The feeling of responsibility, from the great number who have been at our establishment and the free hospitals, has also induced me to labour hard, and spare no expense, in the acquirement of physiological knowledge; and the actual

\* Since this, 105.

practice, in seeing the application of Hydropathic treatment to so many hundreds during the last six years, has given us confidence, because of the great success in so many cases who have tried medicine and even Hydropathy before, without good effect. Our system of mild treatment, with the application of bandages, not used in the same way elsewhere, and some newly-invented baths, have gained such celebrity, that we are now compelled to limit our admissions. I could give references to physicians, surgeons, homœopathic practitioners, clergymen, dissenting ministers, military and naval officers, merchants, manufacturers, &c., whose testimony has often been given to me, acknowledging the benefits received by the mild practice. In the case of females especially, this treatment has done wonders.

The charge at the establishment is fixed with an intention to make it neither a source of pecuniary emolument, nor of loss. A large sum of money has now been invested; and the baths are models for Hydropathic Establishments or Public Baths, and I am very desirous of calling the attention of the patrons of the latter to their superiority over the ordinarily-constructed baths, which not unfrequently cause irreparable injury to the body. No person can use a plunge bath without risk. We could refer to patients who have come to the establishment for relief, whose maladies have been caused by plunging into a cold bath, or into the sea. Many escape injury by such bathing, but none practise it without the risk of being invalids for the rest of their lives, from congestion of the brain, asthma, or internal tumours, caused by the blood being suddenly driven on the internal organs and certain weak parts which are not able to return it. Females, especially, are liable to danger from plunge baths.

One of the principal objects I have in view in this work is to teach Hydropathic remedies for self-application, and to show the labouring classes how to manage many of the processes by the simple means within their reach, which if acted upon, would often stay the progress of fever, consumption, and inflammation, or prevent their proceeding beyond the first symptoms. Resolution, and not sparing trouble, alone are necessary.





Matlock High Tor.

## DIVISION I.

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### The Human Body, its Structure and Functions.

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**T**HE limited space will not allow me to quote the standard works on physiology to much extent. I shall, however, endeavour to give ordinary enquirers a pretty general idea of the subject, and add a list of works for those who wish to enter more minutely into the study of these matters.

Having no professional character at stake, as I have not "qualified" at Surgeons', or Apothecaries' Hall, I can make use of terms that otherwise would expose me to ridicule. There is in this an advantage to my readers, unlearned in the scientific language of the schools, as it enables me to speak in terms they will understand.

We read in God's book, the Bible, that man's body was made out of

the dust of the ground, and we find its composition of the earth, earthy, composed principally (eight to nine-tenths) of gas and water, the remainder silica or flint, and salts; so that in the course of a few years after the death of the body, there is nothing left but a small quantity of dust. "Then shall the dust return to the earth as it was; and the spirit shall return unto God who gave it." The gas and water having risen into the atmosphere comes down in rain, and being absorbed by vegetation, again enters into the composition of human bodies, through the produce of the earth. The very bodies we now occupy may, and most certainly do, contain the very materials that have formerly constituted other human bodies, as nothing here can be annihilated until the final conflagration of all things in and on the earth.

The immortal life, however, was, we read, breathed into man's nostrils by the Almighty Creator, "*and man became a living soul*," to live in, and out of the body for ever. We have here commenced an existence which is but the dim shadowing of the glorious state that is to follow, when this earthly tenement of the spirit is changed for one "incorruptible, undefiled and that fadeth not away." This soul, which acts in and through our earthly frame, performs its movements by an electric telegraph apparatus—the nervous system.

*The Nerves of Special Sense*, seeing, hearing, taste, swallowing, and breathing; and the nerves of motion and sensation, are the three highest orders of nerves, called the spinal cerebral. The fourth order is the organic or nutritive system.

In the spinal marrow the nerves of motion and sensation take their rise, and run together to every part of the frame where motion and sensation exist—a motive nerve will not act unless accompanied by a nerve of sensation, which performs the office of stimulating it, or conveying its message for action. A continuation of the spinal marrow, just within the skull, is called the *medulla oblongata*, from which, and a little farther in the base of the brain the nerves of special sense, of sight, smell, taste, swallowing, breathing, and hearing, have their origin; these nerves, or telegraph wires, proceed to the organs which they are made to give action to. All the nerves of motion, sensation, and special sense are connected with, and ramify into the *cerebrum*, or upper part of the skull; this is the supposed battery where the nervous energy, or electricity is concentrated for the mind to apply as it is wanted; just

in the same manner as the battery is kept charged for use at the electric telegraph station.

The *cerebellum* at the back of the skull is considered to be the battery for some of the nerves of special sense more especially. These three orders of nerves of motion, sensation, and special sense, are called the true spinal *cerebral* system. They are of the highest order; their office is entirely confined to the operation of the mind over the body, except in involuntary acts. Just as these nerves, or telegraph wires, are kept in a healthy state, so is the power of the soul to give expression to its will. When an infant comes into the world, precisely as its cerebral nerves are developed, so is the power of the soul within to give expression to that will; if the cerebral nerves are not developed, or are deficient, the infant grows up with what is called a weak intellect, or idiotic; but the term is erroneous, as concerning the power of the spirit, it is not the immaterial spirit that is deficient, but simply the material of the telegraph wires. The soul can never know any growth or diminution, naturally speaking, in its powers; it becomes conscious of new scenes and new ideas; but the powers to receive those ideas are only limited in this state of existence by the perfectness, or otherwise, of the medium of communication with external objects;—the nerves. The soul is a divine emanation, and possesses powers, only in a less degree inferior to those of its Divine Creator. The deep significance of the expressions in the Bible—"And God said, let us make man in our image,"—"So God created man in his *own* image,"—"And God breathed into man's nostrils the breath of life," are little thought of or appreciated. With this breath God has deputed wonderful powers to his creatures. How wonderfully man is endowed with the power of putting motion into inanimate matter—in steam engines, for instance, and the great variety of machinery! Then how nearly omnipresent man's mind is, and how little the body, or even this globe of earth, can limit its range. It can pursue its course into regions which it has not yet seen, but which it is often compassing in the spirit of thought. When the cerebral nerves are come to maturity in the full grown person, there we see the soul acting with the full powers this state of existence permits; and the sole difference we see in the mental powers of individuals is owing to the difference and unequal developement in the cerebral nerves alone.



We see families inherit a fine developement of head, and just so is their superiority in mental powers, if that developement is in proportionate harmony. We see others inherit the small flat forehead and *cerebrum*, or upper part of the skull, and in these, we know, great mental powers are never seen; it is impossible it should be so, and no attempts at mental culture will ever succeed in giving them great powers. Again, it must be observed, that we see some with a very fully developed upper part of the forehead and skull, yet they are by no means clever. The fact is, that unless the nervous centres in the base of the brain are equally developed with the *cerebrum*, this large developement of the battery only gives impulse without correct judgment. Others, with small developed upper part of the head, are found by no means deficient in great and good ideas; here the centres in the base of the brain are well developed; but for want of a good and sufficient battery in the *cerebrum*, they are slow to act, and want energy to put their designs in execution. On the proper and proportionate and full developement of the nervous centres in the base, and the battery in the upper part of the brain called the *cerebrum*, the character of the individual depends for cleverness or otherwise. This will be found to be the opinion of the most eminent physiologists, and is undoubtedly correct. No persons should ever attempt to acquire knowledge which they cannot accomplish with some degree of ease. I have seen irreparable injury done to the brain by persons endeavouring to acquire knowledge when they have not the necessary developement of brain machinery for the purpose.

As old age comes on, the cerebral nerves, with all other organs, begin to lose their power, and we see the soul, which acted with so much vigour when the frame was at its maturity, again return to the feeble mental efforts of childhood, simply from decay of the matter of the nerves. I shall notice in connexion with the next and fourth division of nerves, the injury done to children by too early education, and the over-working the brain by studious or over-anxious men of business.

I wish, however, not to be misunderstood in these statements with respect to the powers of the soul being limited by the perfect or imperfect structure of the nervous system in the brain. The Almighty and beneficent Creator, evidently has not made man's happiness depend on the conformation of brain inherited from his progenitors. That the

power to acquire knowledge, and to act with vigour, sound judgment, and great foresight, is alone possessed by those who have a harmonious and fully developed brain, is past all controversial doubt; and so is also the fact, that the highest degrees of temporal and spiritual happiness, are by no means unfrequently found to be possessed by those who have little capabilities for great acquirements in the knowledge of this world. God, we often see, takes the weak things of the world to confound the wisdom of the wise, simply, because many persons by the world considered weak, and of little account as to knowledge, have applied for, and received the teaching of the Holy Spirit, making them wise unto salvation, and giving them the peace which passeth all understanding; so that, although they are conscious they do not possess high powers of investigation in secular learning and scientific pursuits, yet they are perfectly content and happy, knowing that God appoints some by great powers in life to fill certain positions; while He makes others conscious that their want of these high powers is no detriment to their happiness, and that soon all who have greater or less talents must give an account to a master who will reward His faithful servants with a crown of life which shall never fade away. And so our Almighty Creator shows to His creatures that in all His dispensations, their consummate happiness is His design and intention,—“And the spirit and the bride say, come. And let him that heareth say, come. And let him that is athirst come. And whosoever will, let him take the water of life freely,”\* that when their task on earth is accomplished, they may realize the apostle Paul’s beautiful exposition of the nature of the body and spirit—“So also is the resurrection of the dead. It is sown in corruption; it is raised in incorruption: it is sown in dishonour; it is raised in glory: it is sown in weakness; it is raised in power: it is sown a natural body: it is raised a spiritual body. There is a natural body, and there is a spiritual body. As is the earthy, such are they also that are earthy; and as is the heavenly, such are they also that are heavenly. And as we have borne the image of the earthy, we shall also bear the image of the heavenly.”†

Next, as to the structure of the spinal cerebral nerves. It will be seen by Sir Charles Bell’s Work on the Nervous System, and Kirke and White, Marshall Hall, and others, that these telegraph wires are tubes, sup-

\* Rev. xxii. 17.

† 1 Cor. xv. 42—44, 48, 49.

posed to be filled with a fluid. When this or the substance of the nerve, or its delicate covering, is vitiated by improper food, or by vicious living, and above all, by stimulating drinks, tobacco, opium, &c., the mind, desiring to act, in attempting to send its messages, strikes upon these weak vitiated nerves, but finds they will not answer correctly to the stimulus applied; nay, more, they will not cease vibrating when the act of the will has been conveyed. A person with good healthy nerves determines on an action, performs it with ease and decision, and when done, the nerves rest until prompted again to act; but not so with the poor nervous hypochondriac—the wires repeat again and again the same impression first made in the nervous centres, the soul having lost control over them. The soul, in fact, has got a trembling disordered harpsichord out of tune, and is often so harrassed and distressed, that, in despair of restoration, would dash the whole machine to pieces, but for its Creator overruling it; and in a similar way when the spirit gives way to the appetites of the body, dissolution is caused by the injury done to these beautiful structures. Without a good knowledge of the nervous system, its structure, function, and action, no person is justified in undertaking the cure of disease; and it is of the utmost importance to every living soul to understand, at least, the outlines of its own system, to be enabled to make the utmost use of its powers, and to enjoy existence with the high privileges God designed for it, bringing the body in subjection to the spirit, and thus fulfilling the high purpose of its creation, in glorifying the gracious and Almighty Creator. These nerves proceed from the nervous centres in the spinal marrow and the brain, in bundles, enclosed in sheaths: and they strike out of the sheaths to their different destinations, as they come near the parts they are designed to give life and action to. Their numbers are incalculable, as every peripheral point of the frame has its direct and separate telegraph wires to the nervous centres in the brain. They are larger at their origin, and become so fine as they enter the ultimate tissues of the body, that their termination cannot be discovered even with a microscope. There is a beautiful spider-like web called the arachnoid membrane, which encloses the spinal marrow, and is continuous over the whole mass of brain; it also lines the sheaths which encloses the nerves, so that the brain, spinal marrow, and nerves, are enclosed in one continuous net-work, in the same manner as the

mucous membrane lines the mouth, stomach, &c. This membrane is wonderfully fine, and is moistened with serum, and therefore called one of the serous membranes of the body, in contra-distinction to the mucous membranes lining the mouth, stomach, &c. When the blood is too poor by being vitiated with stimulating drinks, or tobacco, severe cold, want of good food, or other causes, the serous membrane is short of this moisture, or serum, and, consequently, the nerves move in dry sheaths. This soon tells upon the limbs in motion, and is one of the principal causes of rheumatic pains. The more exercise a rheumatic subject takes, the more pain is caused. I know cases in which persons having been advised to walk their rheumatism off, have brought on such chronic inflammation in these sheaths, and in the sheaths of the muscles, as to have destroyed their vitality, and are now hopelessly crippled. Entire rest, proper diet, with our natural means of restoring the nutritive powers to action, are the remedies we use in restoration. Blistering and heating lotion applications, by weakening the parts, invariably injure instead of benefitting. Any mode of living which prevents the blood affording a due supply of serum to these sheaths, affects the brain and spinal marrow, as well as the nerves, and is often a cause of loss of power in the brain and spine. Irreparable injury is done to the brain and spinal marrow by this principle not being recognized in the barbarous treatment of the spine and its nerves, by issues, cupping, scarifying, powerful ointments and lotions, which never did nor ever can do anything but ultimate injury.

It is easy to discover when the brain is affected, by a sense of fulness in the head or other uncomfortable symptoms; and immediately it is pronounced congestion of the brain, forthwith leeches, blisters, and aperient medicines are prescribed, further weakening and irritating the already distressed nerves, frequently to the ruin of the poor patient.

The idea, that when the head is suffering from a sense of fulness, or irritability, it is only necessary to take some of the fluid out by bleeding, cupping, or blistering, is a mischievous, ignorant, and often fatal error, and lays the foundation of suffering and incapacity for the rest of life. The originating cause of cerebral irritation will, in almost every instance, be found in the stomach, or some other internal part of the trunk of the body. I have had a severe case of sun stroke, with congestion of the brain, to almost entire unconsciousness, and cases of ordinary deter-



mination of blood to the head, and of apoplexy, with loss of memory, which have been restored simply by derivative treatment of fomentation, sitting baths, mustard foot baths, wet sheet envelope, &c. It is to be hoped that the injurious and unnatural system of bleeding, blistering, and purgative practices will be entirely abandoned for more natural modes of curative principles. In the hundreds of cases of every disease and ailment the body is liable to that I have had under my care, (many of which had been given up as desperate before coming to my establishment, or free hospitals,) I have never had recourse to bleeding, blisters, or purgatives; and only one out of the many hundreds I have had, has died in the establishment, and that was the result of the patient's own act in taking stimulants unknown to me, and against my most urgent advice. The principle I act upon in the treatment of disease, is to endeavour to get the nutritive powers into healthy action, and thereby replace inert, morbid, or diseased, or inflammatory matter in the system, by healthy matter, which alone can throw off disease. As it is manifestly impossible to purify vitiated tissue, it must be thrown off and replaced by new, before the body can be at rest, which it never can be, with the presence of dead material.

From this slight sketch of the cerebral spinal nerves, it will be seen what a wonderfully constructed system we possess; and when it is noticed that every voluntary act must first originate in the brain, and that the message has to travel over a considerable extent of the telegraph wire, or nerve, before the act is performed, (and which appears to act simultaneously with the will,) the speed at which the message must travel passes all calculation. One more observation on these nerves before I proceed to the fourth order. From want of a due appreciation of the action and nature of these nerves, and their arachnoid covering, or sheaths, great and irreparable injuries are often done to the frame by practitioners, both allopathic or drug doctors, and by true *cold* water doctors. From the previous observations it will be seen how delicate and sensitive the cerebral spinal nerves are; and no severe shocks can be given to them without risk of permanent injury, or death itself. I am aware, in condemning plunge baths, or sea bathing, I am running counter to popular opinion; but faithfulness in the cause of truth is a greater consideration with me than having my statements ridiculed. No one ever uses a plunge bath, or the sea

bath, without risk ; ninety-nine may escape injury, but the next may be ruined for life. The sudden shock to the nerves, and also driving the blood from the surface of the body on the internal vessels, where there may not be power to bear the shock, or return the blood, lays the foundation of disease, which is often developed a considerable time after. I was naming this to a London surgeon, who favoured me with a visit to inspect my establishment ; he corroborated my opinion at once, and said at that time he had an eminent solicitor under his care, who, in going last autumn to the sea side for rest, plunged into the sea as usual with visitors : the consequence was congestion of the brain, and a severe and dangerous illness, from which he is now a good deal recovered ; but the effect will be felt for the remainder of life. In the case also of a lady I have had in my establishment, who went well, and in health, into the sea : the shock produced congestion in the lungs and chest ; for this, leeches and blisters were applied, which, of course, still farther lowered the vital powers of reaction, and the result was chronic asthma, of a most distressing kind, from which the lady is now a complete invalid, and a great sufferer, without hope of cure. In the case of another lady, who, in hot weather, went into a cold plunge bath, during a visit to a friend : internal congestion was the result ; and an abscess formed which destroyed her.

Errors are also of frequent occurrence by the reflex action of the nerves not being understood. A lady has recently been at my establishment who went under a celebrated professor of physic in Edinburgh, for pain in the lower part of the spine ; this, he told her, was merely rheumatism, and would soon be cured ; he ordered rather severe application to the part, and in a fortnight the lady was laid prostrate in bed. The cause of the pain was irregularity in an internal part, which is supplied with nerves from that part of the spinal marrow. The severe applications to the poor suffering nerves of the spine only aggravated the internal disorder ; she was greatly restored by a long course of mild hydropathic treatment, but I fear will feel the effects sometimes during life, from the barbarous "professional" treatment of the learned professor. I have had not a few cases of what have been termed spinal disease in females, and for which blisters and setons have been applied to the spine, to the invariable injury of the patient—the cause I have always found to be internal irregularity. In some cases, the use of the

legs has been almost lost, but has been, to a great extent, restored by our natural means of cure. I could give many cases of the same nature, for they are, I regret to say, of constant occurrence in our experience. The injury done, especially to females, by bleeding, blistering, injections, caustic, and the use of certain instruments, ruins many a good constitution, and renders them invalids for life.

Sir Charles Bell's, and Dr. Marshall Hall's celebrated works, and others upon the subject, show that pains in one part of the body may have their origin in remote parts : diseased parts communicating by sympathetic pain through the nervous telegraph wires to different parts of the frame. Nothing but a restoration of the nutritive powers can succeed in giving relief in such cases.

Adhesion of the arachnoid membrane to the substance it covers in the brain, spinal marrow, and nerves, is a consequence of inflammatory action, and is often a mysterious cause of suffering, which it is impossible, correctly, to ascertain during life, through the reflex action of the nervous system causing extraordinary pains in parts of the body remote from the point of disease.

The late Dr. Logan, of Leeds, suffered excruciating pains many years, especially in the legs, which he had laid on cushions before him, covered with basket work, lest anything should accidentally brush over them ; so acute was the sensibility. Examination after death showed thickening and adhesion of the arachnoid membrane covering the spinal marrow.

It is one thing to have a scientific knowledge of the frame, and quite another to have a good knowledge how to cure disease. No one can safely be trusted with a ship who has not a scientific knowledge of the laws of navigation ; but however creditably a man may have passed his examination for a captaincy, it by no means follows he is able to navigate a ship unless he has had a practical education on board, both in sunshine and in storm. And so it is with the medical profession. A good curative knowledge can only be obtained by practice, after an educational course.

This is very strikingly the case with many of the first and most scientific writers and lecturers on the human frame. Their time has been spent in the study of the frame, in all its wondrous complexity ; and they have had little opportunities for personal experience in comparison with those who are engaged in practice alone : and, consequently, are



sadly at fault when they prescribe remedies which, according to their knowledge of the functions and structure of the body, *ought* to succeed, but, nevertheless, are of no avail, and often only aggravate disease. A striking instance, amongst many I have had, has just come under my notice.—A solicitor in the north of England writes to me as follows:—

Matlock Bank, June 17th, 1857.

DEAR SIR,

I have great pleasure in writing you an account of my illness, and the remedies I have tried in mitigation of it. I was first struck with paralysis in 1851. Within two or three hours of my first attack, I sent for my usual medical attendant. He shortly called upon me in company with Dr. ———, his subsequent partner. Dr. ——— at that time bled me, and subsequently administered a cup to my neck, and afterwards applied a seton to the same. In about two months time I went on a visit to a brother-in-law of mine, a medical man in ———; with him I stayed a month, or six weeks; and during that visit I twice went to town in my said brother-in-law's company to consult the celebrated Dr. ———, a physician, said to be great in paralytic cases; he only advised me to take a quantity of blue pill, get a pony to ride on, and to take an enema once every morning. The blue pill soon lowered the system, and made riding unsafe, the enema brought only temporary relief. In 1853, I was again struck whilst attending at the assizes. I then got the assistance of a friend of mine in the neighbourhood for that night, and on my return home I got the assistance of a fresh surgeon, who attended me ever since, till my coming here. He had the assistance of Dr. ———, a gentleman well known in ———, who, among other things, advised me *not* to give up my snuff, (four to five ounces per week,) as that, he said, had killed a Mr. ———, a brother professional of mine. I remain, dear Sir, yours truly,

J. Smedley, Esq.

P. T.

The physician referred to is one of the most celebrated discoverers of the nature, action, and reflex action of the nerves; and perhaps no man living is more thoroughly acquainted with the subject. How strange he could prescribe no more effectual remedies. He made little enquiry into the patient's habits: did not prohibit his taking snuff,

allowed stimulants, and failed in giving the least relief! Another physician advised the continuance of the use of snuff, four to five ounces per week!! The patient came in a deplorable state, unable to retain his urine, was deaf, and bowels constipated: all the result of the failure of nervous power. He is now decidedly improving in every respect. No permanent recovery can ever take place unless the nervous energy is restored; all blistering, bleeding, setons, and purgatives, tend not to strengthen or restore, but to weaken and irritate. The father of a boy afflicted with curvature and disease of the spine, with loss of the use of both legs, has applied to me this week for advice; he states his son has been under the care of several medical men, and also in an infirmary, where issues were put in the poor creature's back, with twenty-eight peas; his sufferings became so intense, the father removed him. From the first there could be no hope of restoration, and all the unnatural torture of the nerves only aggravated the misery of the poor lad. How issues, with the twenty-eight peas inserted along the spinal column, with all its delicate membranes and net work of nerves, was to restore and give nutrition to the part, is past comprehension; but in such way thousands are ruined for life or destroyed.

THE FOURTH ORDER OF NERVES, commonly termed the nerves of organic life, or nutrition, or ganglionic system.

These nerves, by their *vis vitæ*, or power of life, have entire control over the organs of circulation, nutrition, secretion, absorption, and excretion; they have the same structure as the spinal cerebral nerves—tubular, and filled with fluid encased in sheaths, and act by their electric powers, and so identical is this property, that the power of one order is lent or sympathises with the other in cases of emergency; as for instance, when the brain is pressed by mental exercise, the vital power of these nutritive nerves is also called into the assistance of the cerebral system; and if the mental effort is long continued, the proper office of the nutritive nerves is partially suspended, causing what is commonly called indigestion, biliousness, from the liver not acting, and so lowering the power of all the organs of nutrition and circulation.

On the contrary when the mind is not properly exercised, the vital power of the cerebral system is left to add its influence to the nerves of

nutrition, and so often produces a state of obesity, or fat, even to apoplexy.

When food is taken into the stomach it is there dissolved by the action of the gastric juice ; but unless the vital power or electricity from the large plexus of nutritive nerves at the pit of the stomach is sufficiently strong, the chemical change in the chyme or fluid does not take place ; the consequence is acidity, followed by fermentation, causing great irritation in the stomach, duodenum, and bowels. This unhealthy matter passes into the bowels where it is taken up by the absorbents into the blood, and so into the tissues of the body, building it up with inert or effete matter, which the body then tries to throw off ; if there is power to accomplish this, by boils, rash, shingles, diarrhœa, or other means, the vital organs are kept from injury ; but if the vital power is low, the organs cannot resist the contamination, and the result is inflammation, fever, &c., which often leads to the dissolution of the whole frame.

A good knowledge of the nature and action of these organic nerves as well as of the cerebral system, is absolutely necessary, to enable the soul to carry out the work it has to perform with comfort and health. The electricity in these nutritive nerves is the cause of the circulation of the blood, also the absorption by the liver of material out of the blood to manufacture bile or gall ; it gives power to the liver to manufacture saccharine matter or sugar, red corpuseles, &c, to enrich the blood ; it gives power to the uriniferous tubes in the kidneys to draw out the urine, with other impurities, from the blood ; it gives power to the flesh, bone, &c., to assimilate their materials out of the blood as the blood circulates through the body. The electricity or vital power of these nerves, commonly called ganglionic, or organic is in fact the life of the body ; and just as this power is in vigour, or otherwise, so is the healthy action of the system. As electricity is the motive power of the will, and is generated in the brain, so the same element exists in these nutritive nerves, for the purposes of nutrition, &c. This electrical power, however, is more generally generated in the body, as demonstrated by works on animal magnetism, which show that in the fibrous tissues of the body, molecules of magnetic principle exist extensively. The importance of a knowledge of this principle in the human body cannot be overrated in the study of health and disease, as

it is in fact the key or principle by which the bodily powers are to be renovated, or kept in health ; and it is the only true principle on which to act ; all attempts at curing local disease, or preserving health, without taking this, as a basis, only leads to chance and temporary success, and often to the undermining of the constitution, by attempts to expel maladies by local applications internally or externally. The first point to notice is, how this *vis vitæ*, or power of life, in the organic or nutritive nerves is to be kept up to its standard. This is only to be accomplished by strict obedience to the natural laws laid down by the Creator as a condition of health. The high privilege of free will, enjoyed alone by man of all God's visible creation, is at the same time a source of supreme happiness to him, but by his perversion of this high privilege, a source of misery, suffering, and eventually temporal and spiritual ruin. When man brings his body into subjection, and is guided in his actions by the allwise immutable, beneficent laws laid down in God's word for his happiness, he takes food and drink for the purpose of enabling him to perform the mission God has appointed him, and brings his body, with its animal desires, into subjection. Just as mankind approach this standard, so we see them realize the position God intended them to fulfil ; but on the contrary, when the soul gives way to the promptings of the appetites, so we see a whole flood of disease and misery let loose on the poor creature which often debases him below the brutes themselves. Comparatively few strike out a course from their own convictions. The customs of society, fear of ridicule, or being thought singular, carries multitudes in the stream against their better judgment, and for which they have to pay by suffering with the multitude. Companionship, however, in suffering of this kind, I cannot conceive, affords any consolation. The habits of life and diet in general society, are in many points, directly opposed to the laws of health. Breakfast, with toast and butter, strong stimulating coffee, strong tea, especially green, which is well known to be coloured with a highly deleterious ingredient ; white bread, with alum, (which the bakers say they are compelled to put in, to please the public, who will have a white, light loaf) ; other aliments, such as broiled bacon, salt fish, ham, with mustard and pepper, and not unfrequently have I seen, at commercial hotels, bitter ale added to most of these viands. Then, some take luncheon, or rather a first dinner

of animal food, &c., with wine, ale, or porter; and later in the day, a second, and principal dinner, sometimes like the one I describe farther on. Others take dinner at one or two o'clock, composed of soup, animal food, with condiments, (without which, the indulged palate cannot relish plain food,) pastry, sweets, followed by cheese and uncooked vegetables in the form of celery and salads, with ale, porter, and wine, and in many cases concluding with a cigar, or pipe of tobacco, and spirits. These at five or six o'clock take tea, with toast and butter, cakes &c., and animal food and tart again at nine o'clock; with ale, or spirits, cigar, or pipe, by way of finish to the day's work of eating *not to live, but living to eat*. When we investigate the nature of the food best adapted to make sound muscle, &c., and to keep up the *vis vitæ*, or electric power of life, it is no wonder we see the multitude of maladies, so general among mankind, debasing the tissues and affecting the brain.

#### THE STOMACH, LIVER, BOWELS, &c.

The organic, or nutritive nerves, are spread throughout the body, but have no common centre, as the cerebral spinal have. The principal plexus, or mass of these nerves is at the pit of the stomach, because there the first operation on the dissolved food, or chyme, as it is called, is to be performed: that is, the chemical change is there to be first communicated through these electric nerves. When there is good healthy power in these nerves, the change is performed perfectly; the matter then passes through the pyloric orifice into the duodenum, which is Latin for twelve (this first bowel, or second stomach, being supposed to be generally twelve inches long). Here another important addition is made by bile conveyed into the duodenum by the gall-duct from the gall-bladder, and also by addition of the pancreatic fluid brought from the pancreas, or sweet bread, by another duct. The alimentary matter then passes into the small gut, which is supposed, on an average, to be about twenty-eight feet in length; at this stage, as will be explained, the principle part of the nutriment is taken out and conveyed into the circulation for the support of the body. The insoluble part, with the fecal secretion drawn out of the blood in the colon, forming what is commonly called the motions or excrement, passes through the colon, or large gut, and is discharged at the anus; the colon, as will be seen



by the engraving,\* rises on the right side, near the groin, where the celiac valve is situated, ascends upward toward the liver, across the top of the bowels, and then descends down the left side, turning and laying on the spine in the lower part of the back to the anus, or seat.

The twenty-eight feet of small gut is attached to a mass of fat, called the mesentery; under this mass of fat, running upwards along the spine, is a main vein, or, as it is termed, the thoracic-duct, because it rises up to near the throat, on the left side; from this vein, or thoracic-duct, there are vast numbers of tubes which proceed into the bowels protected by the mesentery; these lacteals, or absorbents, project a short distance into the bowel,† where they come in contact with the digested food passing through, and they, by their electric power, absorb the juice out of it, and convey it to the thoracic-duct, where it ascends to the front of the left breast, near the top of the shoulder; there it enters what is called the left subclavian artery; this subclavian artery contains exhausted blood, brought round to be renewed, and the contents of the thoracic-duct are here mixed with this exhausted blood, and then passes downward into the right valve of the heart; the valve opens to receive it, then by its muscular power of contraction, forces it into the lungs, where the fluid, yet of a dusky colour, comes in contact with the air, and imbibes oxygen, which turns it scarlet, and makes it now fit for absorption into muscle, bone, &c. The renewed blood now passes into the left side of the heart, and from there it is pumped into the large veins, called arteries. Vast numbers of very minute veins, called capillaries, proceed into the flesh from the arteries, round the bones and to every part of the frame; where they come in contact, each part, by its vis vitæ, or electrical property, has the power to take out of the blood the material for its peculiar support and structure.

The absorbents before named in the bowels take into the thoracic-duct, out of the digested food, any juices, without choice or selection; this matter has then to be purified, principally by passing through the lungs, liver, kidneys, and by passing through the vast number of glands.

The blood enters the substance of the kidney by arteries, from which, as will be seen in the engraving,‡ small sprigs arise, terminating in a

■ See Illustration, &c.

† See Illustration of intestinal villi.

‡ See Illustrations at the end of the Work.

knot of vein called malphigian tubes. A uriniferous tube covers this, and, by its electric power, draws out of the blood through the knots of vein, the urine, together with phosphate, urea, and other matters not required for nutrition. When these knots of delicate structure become inflamed, or diseased, by alcoholic drinks, or other bad matter in the blood, they allow the rich and nutritive parts of the blood to pass with the urine; and soon rapid waste of the body takes place.

The liver takes out by its electrical power, or *vis vitæ*, waste material to manufacture into gall, which, when made, is deposited in the gall bladder, situated between the lobes of the liver, and by exercise the lobes press the gall bladder, and the gall issues into the duodenum, and is the natural stimulant, or purgative, for the action of the bowels. If the electrical power of the nutritive nerves is weakened by alcoholic drinks, tobacco especially, or by improper food, the bile or gall is not taken out of the blood; it continues to circulate through the body, carrying mischief wherever it comes in contact with the delicate sensitive telegraph wires, or nerves; and if relief is not given, produces jaundice. When the gall is of a bad quality, irritation of the mucous membrane and nerves of the duodenum is caused, and instead of the bile passing as it ought to do into the bowels, it finds its way upwards into the stomach, and is thrown off by vomiting, or passes downwards, irritating the bowels, and causing diarrhœa, and this is the way many have to pay for the pleasures of the pipe, and indulgence at table.

The liver acts also as a nutritive organ, forming sugar out of the exhausted blood, and returning it into the circulation; and also in forming the red corpuscles which must be present in healthy blood. A large amount of impurity in the blood is thrown off by the lungs, and they also draw in oxygen, which, coming in contact with the carbon in the blood, produces combustion, and so gets rid of impurity. When a person has fetid breath, the blood is in a bad state, and this should always give the alarm to rectify the impurity by proper diet, attention to the skin, &c., before the impurity increases, and typhus fever or inflammation result.

On an average, one hogshhead of blood passes through the heart and lungs every hour, and entire circulation takes place in one to two minutes. A power equal to 4 cwt. is exercised by the lungs in drawing in the air into the bronchial tubes and air cells, and of 3 cwt. in expelling



the air out of the lungs; and it is supposed the linings of the bronchial tubes and air cells under which the blood circulates to come in contact with the air in the tubes and cells, exceed thirty thousand square inches. Besides the liver, lungs, and kidneys, other organs act as purifiers. The skin, with its three thousand pores to every square inch, throws off from an average sized person two to three pounds every twenty-four hours, by insensible perspiration. There, are, it is supposed, on an average, twenty-eight miles of these minute corkscrew ducts to let out the perspiration. Then there are as many pores called absorbents, to let in air to the minute capillaries, or small blood veins, to give them oxygen, and to cause combustion of innutritious matter. Hence the necessity of breathing pure air, and keeping the skin cleansed of this excretion, or it will be re-absorbed; and, also, the necessity of having under garments frequently washed, or they will become saturated with this fetid matter, and will restore it back to the system by the absorbents.

The extensive system of lymphatic veins and glands distributed throughout the body absorbs matter, purifies it, returns the nutritive part into the system, and the rest into some of the channels which carry other impurities away. The glands perform a very important office, and act extensively as chemical laboratories in preparing nutritive matter for assimilation; beyond the fact that they have this power little is known of their complicated delicate structure. The wonderful laboratory of the human frame, taken in all its workings, is altogether past comprehension.

It would make this description too complicated to go into all the minute particulars of the structure and working of the various parts of the frame; I give farther on a few engravings and notes, and at the end of the work, a list of books which enter into these particulars.





High Tor Tunnel, Matlock.

## DIVISION II.

### Diet, Clothing, and Habits of Life.

**W**ITHOUT a firm resolve to conform to the laws of nature in respect of diet &c., no curative treatment will avail for health or comfort; thousands, indeed by far the majority, both eat and drink what they know is not best for their healthy sustenance, and yet persist in such a course, bringing upon themselves much suffering, and shortening their lives. Some act thus from taste, and others from a dislike of being thought peculiar in their habits of life. Such are generally complaining, and constantly applying for the doctor's advice, who can do nothing for them but give temporary relief. SELF DENIAL, and decision of character bring commensurate

reward in good health and self-respect. I have not the slightest expectation of making all converts to simple living who read this book; but as my former pamphlet induced many to govern their tastes for the benefit of their health, I have no doubt this will have a similar effect in many cases. I have recently had two army officers in my establishment who were restored to comparatively good health during a short stay; and although they owned the benefit they received from our simple mode of living, and abstinence from stimulating drinks, and tobacco, yet they declared it was impossible to avoid taking wine, spirits, &c., at the mess table, and at the dinner parties they were obliged to attend. A recurrence to late dinners, and the usual quantity of wine they had been in the habit of taking, and cigars, will certainly bring a return of the ailments for which they came to my establishment, and prevent them enjoying that good health and calm state of mind which a natural state of the stomach and quiet nerves so materially promote. We have signed the total abstinence pledge not to use any alcoholic liquors, or keep them in our house, except for medicinal purposes; and, consequently, are not pressed to break it by our friends. This plan is by far the best; it sets a good example, and is a security against returning to an injurious practice.

DIET.—The following is the simple plan of diet we practice, both at home and at the Hydropathic Establishment, and which we can recommend from experience at both the above places.

BREAKFAST.—Scotch oatmeal porridge, with golden syrup, or milk; brown bread and butter (*on no account buttered toast*); light boiled eggs, with cocoa made from the stewed nibs. A glass of water, with brown bread and butter and a light boiled egg, is, however, far the most wholesome. Toasted bread tends to constipation.

DINNER.—Ordinarily I advise moderate use of animal food, with simple vegetables, farinaceous puddings, rice, flour, tapioca, sago, semolina, with stewed apples, rhubarb, or other green fruit. Avoid all dried fruit, as the husk never dissolves, but passes whole. What is called plum-pudding is especially indigestible. When the puddings are removed, dinner should be finished; all after does harm. Water only for beverage. In all cases very moderate in animal food; the less, the better, and if any chest affection, or stomach or liver irritation, animal

food is positively injurious from its stimulating qualities ; in cases of constipation animal food will increase the difficulty greatly. In stomach affections, or weak digestion, I prescribe meat chopped fine, and mixed with bread crumbs, and a spoonful of gravy, no vegetables. If persons will but confine themselves to simple food, they will be amply rewarded with good health and quiet nerves.

**EVENING MEAL** six or seven o'clock, consisting of weak black tea, cocoa, brown bread and butter, eggs, or Scotch oatmeal porridge ; we take nothing after this except sometimes a glass of milk, without bread ; some constitutions may require a little bread and butter, and a glass of water at nine o'clock, but they are exceptions,

**ADVICE TO MINISTERS OF THE GOSPEL AND ALL PUBLIC SPEAKERS.**—Dr. Jonah Horner, in his excellent work on "Health : what Preserves, what Destroys, and what Restores," (Ward and Co., Paternoster Row, price 1s. 6d., and in which there is also much important information in a popular form) says, "I know that many ministers of the glorious Gospel, who preach on week-nights as well as on the Sabbath, make a great mistake in taking suppers after their labour in the pulpit. I know well, that they are frequently urged to it by the kindness of friends with whom they have their temporary abode. Frequently, also, they have walked some miles to their work ; and a sense of fatigue after sermon, with, perhaps, a somewhat urgent appetite, plead strongly, but wrongly, for supper. Let such remember, that *sleep* is the only legitimate restorer of nervous energy ; and that food is for the supply of the waste of the tissues. Again, a demand is always made on the nerves for the digestion of food. You see, then, that at bedtime, when the brain and nerves are in the most exhausted state, it must be improper to take food for that purpose which is best and most naturally answered by sleep."

This will be found quite true in practice, although it is so opposite to popular opinion. Abstaining from animal food altogether, when pressed with mental exercise, will be found of great service. The idea that strength cannot be kept up without the use of animal food is shown to be fallacious by some of the first authorities on such subjects ; the strongest, healthiest, and longest lived people in the world do not use animal food at all. The following statements as to the comparative



ingredients of brown bread and pure blood show that, by a diet of pure brown bread and water only, the body will be supplied with perfect nutriment.—

BROWN BREAD, when unadulterated, contains all the elements of pure blood, the comparative ingredients are as follows:—

| Pure Rich Blood contains—       | Pure Brown Bread contains— |
|---------------------------------|----------------------------|
| Fibrine - - - - -               | Fibrine                    |
| Casein - - - - -                | Casein                     |
| Albumen - - - - -               | Albumen                    |
| Colouring matter - - - - -      | Gluten                     |
| Fat - - - - -                   | Oil                        |
| Sugar - - - - -                 | Sugar                      |
| Chloride of Potassium - - - - - | Chloride Potassium         |
| „ Sodium - - - - -              | „ Sodium                   |
| Phosphate of Soda - - - - -     | Phosphate of Soda          |
| Lime, Magnesia - - - - -        | Lime, Magnesia             |
| Iron - - - - -                  | Iron                       |
| - - - - -                       | Starch                     |

#### Best Brown Bread.

1,000 lbs. of wheat ground all down together contain—

|                     |                  |
|---------------------|------------------|
| Muscular Matter - - | 156 lbs. - - - - |
| Bone Material - - - | 170 „ - - - -    |
| Fat - - - - -       | 28 „ - - - -     |

#### Fine White Bread

1,000 lbs of finest White Flour contain—

|                     |          |
|---------------------|----------|
| Muscular Matter - - | 130 lbs. |
| Bone Material - - - | 60 „     |
| Fat - - - - -       | 20 „     |

Taking the three ingredients together, the flour with bran in is far more nourishing than fine flour without bran.

From the above it will be seen that pure brown bread will alone support life and supply all the constituent parts of pure blood; and it is to be noticed that no other single article of food alone will afford this. Brown bread is often adulterated from the colour hiding defects in the material. The best way to procure good brown bread is to take 14lbs of the best superfine flour, adding to it 1½lbs of sifted bran, and fermenting with yeast, made according to the receipt at the end of this book. Brewers, or publicans' yeast always contains deleterious matter, which is thrown up more especially in the yeast. German yeast is also highly objectionable. When it is proved beyond all doubt that homœopathic

or minute doses of drugs produce powerful effects on the body, it is very obvious that persons taking not very minute doses of alum, &c., (which bakers' bread almost, if not quite without exception, contains,) must prevent any hygienic treatment keeping the body in health. The public will have very light and very white bread; and liquor that sparkles and foams in the glass, and potent to stimulate; the bakers, brewers and publicans, consequently, are obliged to put ingredients\* into their manufactures to please the public, to the ruin of the health of their customers; shortening their lives by slow, and often painful, disease.

**DINNER PARTIES;** *or the way in which persons prepare themselves for the doctors.*—When society is more fully alive to the wisdom of eating and drinking to enable the body to go through the duties of life without regard to pleasing the palate, life will be greatly lengthened, and disease and suffering immensely decreased. Thousands now are in a constant state of nervous dyspepsia, and their lives rendered anything but happy, simply by their living more to please their taste than to sustain the body. I shall never forget joining a dinner party, which I will adduce as an ordinary illustration of the way in which thousands, who have the means for destroying their health and comfort, are either daily or several times a week practising. The party was at a gentleman's house in a distant part of the country, and will not, I know, be recognised by any readers of this work, except, perhaps, by the gentleman himself. It was on a cold winter's evening about ten years ago, snow on the ground, and a severe frost; provisions dear, work scarce, and a time of unusual suffering among the poor. After we had assembled in the drawing-room, before dinner, the conversation turned on the topics of the day, and, amongst other matters, on the great distress among the people around. The gentleman said that he had that afternoon visited the house of an old man, which I knew to be within one hundred yards of his own door. He saw a pot on the fire, with something boiling in it. He knew the old man, who lived alone, was very destitute, and he asked him what he had in the pot. He replied, he should not tell him.

\* Porter and Ale are adulterated with cocculus indicus, tobacco, grains of Paradise, capsicum, ginger, quassia, wormwood, calamus root, carraway and coriander-seeds, orange powder, liquorice, honey, sulphate of iron, sulphuric acid, cream of tartar, alum, carbonate of potash, oyster shells, hartshorn shavings, faba amara, or nux vomica, and beans for fining.

The gentleman went to the fire, lifted up the cover, and saw the pot filled with turnip tops, or leaves, which the old man was cooking for his only meal that day. This, of course, was heard with some expressions of sympathy by the assembled party, especially by the ladies. It was, however, too disagreeable for us to dwell upon, and so, after a little chat on more agreeable subjects, the servant announced the welcome summons to dinner; and away we went in procession to the dining-room, each gentleman taking a lady on his arm, forgetting all about the turnip leaves, and such disagreeable matters as we entered a large and well lighted dining-room, displaying a well furnished table, with a tureen of soup at one end, and a very fine codfish at the other—at present under cover—and various decanters and long necked bottles of wine. I well recollect the sight which greeted us. After we were all seated, and the short grace pronounced, we fell to in good earnest, for we had a good deal of work before us, and even winter evenings come to an end. Some chose the rich white soup, made principally of cream, stewed veal, and fowl, almonds, vermicelli, onions, sweet herbs, &c. Some chose cod-fish and oyster-sauce; with this course, one or two glasses of wine were dispatched. I often found it rather disagreeably perplexing, and I am sure others did too, to know which to choose among so many good things, and rather annoying to be obliged to miss tasting some of them.

Next followed roast beef, and boiled turkey, with rich white cream sauce, some mutton chops, sweetbreads, &c. The latter dishes, for the information of the uninitiated I may state are called *entremets*, or side-dishes, and are cooked in a scientific way, for delicate or curious stomachs which cannot feed upon plain beef or mutton. Potatoes, ornamented dishes of turnips and carrots, greens, vegetables, vegetable marrow, and sea-kale, helped us to avoid feeding too heavily on solid flesh, and with the sherry and sparkling Moselle wine, gave great satisfaction to the gratified palate. Many a pleasant sally of wit and agreeable interchange of pledges in the wine-glass heightened the pleasures of good fellowship; and as it was at a religious man's house, and some highly reputable religious persons present, I believe all felt as I did, that we could not possibly be doing anything, either wrong or inconsistent with our christian profession, at least I am sure that was my feeling; and I had so often been complimented for being a sound



churchman, and a christian—and this, by the ministry—that I for one was as content and convinced on the subject, as if I had had Christ's testimony on paper in my pocket.

But to proceed with the business of the evening. It was now about seven o'clock ; we had entered the room about six, and there was yet a good deal to dispatch. After the beef and turkey were removed, a pheasant, a hare, and a brace of partridges were uncovered, with dried bread crumbs, gravy, and smooth bread sauce cayenned for the game, and red currant jelly and force meat stuffing for the hare. Vegetables, little or none, as we had already filled up some chinks with them, and they prevent the fine flavour of game from being fully enjoyed. Wine, of course, was from time to time supplied by the servants, who kept a sharp look out on empty glasses, making it rather difficult for us to recollect how often they had been emptied.

The next course consisted of rich plum-puddings, brought in a blaze from spirits of wine being poured over them and then lighted ; custards, tarts ornamented and otherwise, syllabubs, creams, trifles,\* jellies in pyramids, and sweets in various ornamental forms, according to the extent of the hostess' talent for invention. Champagne, as being of a more lively character, is served round with this course, and I well remember on this occasion, from the butler not having guarded his bottles from the severe cold, several of them were opened and taken away, not being found " up : " these cost about 6s. 6d per bottle, and when once opened are spoiled. After having solaced ourselves with these creature comforts—celery, cold and toasted cheese with maccaroni, and tankards of spiced ale were introduced ; and then grace was said and dinner finished. We had, however, by no means done either with eating or drinking : the table being cleared, fresh decanters of the best wine, and various fruits were brought on, with brandy-cherries, preserves, biscuits, guava jelly, preserved pines, walnuts, almonds, &c. After the first round of the bottle, the ladies retired, and we sat chatting on various

\* AN EXCELLENT TRIFLE.—Lay macaroons and ratafia-cakes over the bottom of your dish, and pour in as much brandy and sherry as they will suck up ; which when they have done, pour on them cold rich cream custard. It must stand two or three inches thick ; on that put a layer of raspberry jam, and cover the whole with a very high whip, made the day before, of rich cream, the whites of two well beaten eggs, sugar, lemon-peel, and rash-wine, well beat with a whisk kept only to whip syllabubs and cream.

topics, sipping our wine and helping ourselves to fruit, &c., as fancy inclined us. The feast and the good fellowship, with so many good religious people present, and the nicely warmed room, made us quite forgetful of the man with the turnip tops for his dinner and supper; and when, after a cup of coffee and a small glass of liqueur, we went into the drawing room, to the ladies, we found all still *coulour de rose*. We sipped our tea, enjoyed the usual amusements of the evening, and took our leave about eleven o'clock to our various homes: said our prayers, asking God to "give us day by day our daily bread: lead us not into temptation, but deliver us from evil,"—and those slept who could.

I have been thus particular in description for the information of those who may read this book, but who may never have had the privilege of good (?) *society*, and I will also assure them I have given a strictly true relation, as many poor jaded cooks and butlers can avouch; and I will also tell them, such feasts are of almost daily occurrence at various seasons of the year, and at intervals throughout the whole year, and they are given and partaken of, by both clergymen and laymen who esteem themselves both orthodox and evangelical. It is quite true part of the viands I have described are sometimes omitted, but it is not because there is either objection to serve or partake of them, but because it is not quite convenient for every one's pocket. After all this, the account has to be settled with head-ache, heart-ache, gout, liver disease, congestion of the brain, and a long list of diseases brought on by a few hours of sensual enjoyment: yet, total abstainers from alcohol, and moderate liver, who enjoy good health, are rather the butt of society than those who act more like heathens than christians. I have long taken leave of head aches on this score. Eating and drinking only to live, I find brings me excellent health, and the satisfaction of having ability to perform the duty God has assigned me.

**CLOTHING.**—No system of bathing will avail to keep the body in health without attention to this point. It is the fashion at most Water Cure Establishments to prohibit all under clothing. In some establishments no sooner does a patient arrive, but the doctor requests all flannels to be dispensed with, saying they prevent the free action of the air on the surface of the body. This theory however is found

impracticable if patients are to make any progress in expelling morbid matter from the body, or quieting irritated nerves; for until the *vis vitæ*, or power of life, is raised, the cold only causes greater internal congestion. The vital power must first be strong enough to cause circulation of warm healthy blood on the surface of the body. Then the patient will use lighter under clothing, but not in this uncertain climate dispense with it altogether. Very fine woollen underclothing even in summer, keeps up an even temperature on the skin, and allows evaporation without a sense of damp, which perspiration causes both with calico and linen. The demand for India gauze under-waistcoats made of foreign wool, or silk and wool, is very considerable, even for the East Indies, and other hot climates. The late Duke of Wellington found he could not keep his men in health with their linen pantaloons, and ordered the use of under clothing and cloth trowsers.

Dr. Gully, at page 413 of his book on the Water Cure, makes some sound and incontrovertible observations on this point. I also have often seen much mischief and suffering caused by the attempt to harden the body by exposure, and have known cases from water establishments, where the attempt has resulted in permanent injury to the constitution, and with some it has cost their lives. I do not by any means, advocate persons coddling themselves in flannels; the rule with me is to advise all my patients, and others, to wear just sufficient to keep the surface of the body warm. In cases of invalids, where the vital power is low, more is required than by persons in good health; more is required by those who lead sedentary lives, and especially by those who have much brain work, as such work draws on the electricity of the nutritive organic nerves in aid of the brain, and consequently lowers the vital power of the body; and as to invalids, or any without a strong constitution, none can dispense with it and regain health: warm clothing, especially in winter, preserves the vital heat, and, consequently, aids the action of the liver, stomach, and especially the bowels—as Dr. Gully justly observes, great mischief is done by attempts at hardening the body; blood is driven from the surface to the internal organs, and numbers lay the foundation of disease in this way. The lungs are most sensitive to an overcharge of blood. The feeling of cold, or otherwise, must be the guide; and in summer, caution should be used in not overclothing the body; but when frosty nights come

on, in autumn, all who are not robust should begin to take precautions.

**EXERCISE.**—Long walks before breakfast are injurious; the stomach exhausted, has not power to digest the food, and acidity and head-ache are the consequences. A crust of bread, and a glass of water, or milk, should be taken before going out. Exercising the limbs, lungs, and whole frame, is indispensable to health. A lesson in Lings, or the Swedish Movement Practice is very beneficial. (The little work on the subject, price 1s., to be had of any bookseller, will well repay its cost.) Unless the body is properly exercised, the replacement of worn out tissue and morbid matter is slow; and by the full exercise of the lungs in good air, oxygen is freely brought in contact with the carbon, or useless matter, which is consumed and carried off. Where persons cannot take long walks, they may do a great deal to keep themselves in health by exercising their limbs, working the arms, filling the chest as full of air as possible, holding their breath, and then using action of the limbs, throwing the chest out; but numbers will be at no trouble of this kind, merely because they have no country walks near, or gardens to exercise in. Health, however, can only be enjoyed by unsparing effort, and will well repay any amount of trouble and self-denial.

**INJURIOUS EFFECTS OF SMOKING.**—S. Solly, Esq., F.R.S., the eminent Surgeon of St Thomas's Hospital, Borough, has lately delivered a very important lecture on paralysis, before the students of that excellent institution, in which smoking is pointed out as one of the various and insidious causes of general paralysis. After condemning the immoderate use of malt liquors or spirits, which only stimulate for a time, and afterwards produce the most enervating and pernicious effects, the lecturer proceeded—"There is another habit also which I cannot but regard as a curse of the present age—I mean smoking. Now don't be frightened my young friends, I am not going to give a sermon against smoking, that is not my business; but it is my business to point out to you all the various and insidious causes of general paralysis, and smoking is one of them. I know of no *single* vice which does so much harm as smoking. It is a snare and a delusion. It soothes the excited nervous system at the time, to render it more irritable and feeble ultimately. It is like opium in that respect, and if you want to know all the wretchedness which this drug can produce,

you should read the 'Confessions of an Opium-eater.' I can always distinguish by his complexion a man who smokes much, and the appearances which the face presents, is an infallible guide to the habits of such a man. I believe that cases of general paralysis are more frequent in England than they used to be, and I suspect that smoking tobacco is one of the causes of that increase."

#### INFLUENCE OF EARLY HABITS AND EDUCATION.

The influence of the development of the nervous system on the infant is of deep importance in the formation of character, but is a subject too abstruse and extensive to be more than alluded to in this little work. It will be seen from my previous remarks, that through the nerves all the knowledge of sensation, motion, and perception are conveyed to the soul or sentient part of our being; and it is only through the operation of these nerves or telegraph wires, that we see the works of Creation around us, that we converse with our fellow-creatures, that we act in the business of life, and through these nerves we become sensible of all sensual impressions. Now we know that by hard labour in bodily exercises, the muscles and limbs are more fully developed; and so it is the case with the nerves in early life. The ruin of many might be traced if the truth could be ascertained to their early training. Even in early infancy the practices of some nurses, or foolish persons, to awe, soothe, or quieten infants,\* leads to the unequal development of certain nerves which afterwards become a source of misery to the religiously educated, and destruction to others not brought up with good example and advice, to keep their bodily animal propensities in subjection to their reason and convictions. Many earnest christians have to bear a thorn in the flesh from causes little thought of, and which, if their parents had had knowledge, might have been avoided; passion, addiction to strong drinks, and other more insinuating sensual desires, have been conveyed to the mind through particular nerves formed for righteous purposes, but when unduly and untimely developed were turned into a curse. Whitehead, on Hereditary Diseases, and M'Dougall, on Spermatorrhœa,† give sad pictures of human suffering and misery, which might have been prevented by enlightened christian discipline in parents and their offspring. Again, overworking the brain

\* I do not allude to any drugs, but to actions.

† Pages 160-170.



of young children stops the healthy development of the nerves, muscles, bone, &c., rendering them when they come to act on the world's stage, utterly unfit for their duties. The soul has in consequence, (as before observed,) a poor weak disordered machine to act its great mission through; and we see want of decision, irritability, and the judgment weak and easily carried away by animal impulse. How rarely the children of our successful statesmen, merchants, and manufacturers, equal their parents in vigour? How often we see or read of young men from the country making large fortunes and distinguishing themselves by great powers of action: mentally and physically their nervous system was fully developed, and uninjured by brain work in their youth, so that when they come on the arena of action, they find in their well developed frame a machine fully equal to bear the vicissitudes of life with composure. Seldom, however, is this constitution continued in their descendants, for, over-rating the value of a scientific or accomplished education, they begin early to give their children a training, which they think they were deficient in themselves; and by this means lay the foundation of nervous dyspepsia, with its long catalogue of miseries to be handed down through them to future generations, increasing the evil from one generation to another, till the brain machinery being thoroughly degenerated, hereditary insanity or inability to bear any great mental efforts is the consequence. Children of the middle and higher classes are early put on diet of flesh meat and strong stimulants, which carry thousands off by inflammation and fever, certainly not to the great loss of society at large, seeing that such a course of diet inevitably produces anything but amiability of disposition. Children should never have flesh meat or stimulants if they are to have calm minds in sound healthy bodies.

We are greatly encouraged in our work by the testimonies we continually receive, that we are not labouring in vain. An Englishman in Holland has written to me, stating that one of my Hydropathic pamphlets fell into his hands, and that for several years he has kept himself and family in health by following the directions it contains; and in that country of ague and fever the hydropathic system is indeed valuable. A journeyman watch-maker from Coventry came to me last week in a miserable state, after having tried every means in his power for the restoration of his health, and he is now in a fair way for reco-

very. He was induced to come by one of his fellow-workmen, who, having, after every means for his recovery had been tried and failed, got one of my pamphlets, acted promptly by it, and was soon restored.

In return for our incessant labour, and the expenditure of our income, we have often the great gratification of meeting our former patients as we journey about home or at a distance, who come with their friendly recognition to tell us of their welfare, and how God has restored them to fulfil the duties of life. Many a free hospital patient, and some at our establishment, tell us with joy that while going through the process for the restoration of their bodies, God has cured their souls of sin's leprosy; others, who, although too far gone for bodily restoration, have found what is more than health of body—they have become acquainted with Christ, and the knowledge of their sins forgiven. One interesting letter I give as follows from Captain Dudridge, at one time one of the finest specimens of an English seaman that ever trod a deck; rejoicing in his strength and manly beauty, he only thought of God as thousands of careless sinners do, without any real desire to obey and love him. A blow on his spine laid him low and made him a cripple; he came to my establishment—his health was improved, but the injury to his spine was irremediable. He found, however, peace in believing, and is now one of our dearest christian friends.

*Bridgewater, Friday ———.*

“MY DEAR SIR,

I know you will be glad to hear from me, and how I am getting on. I am still laying on my beam ends, with my timbers chafed, very sore, and no prospect of getting repaired in this world, as it appears there are no carpenters to be got that understand the damage done to my hull. One doctor says the keel is broke (in the shape of my back bone); another says it is the dry rot in my timbers (in the shape of rheumatic in the joints.) But for all that, it is a consolation to know that there is a Physician who knows, and can, if he thinks fit, refit and send the ship to sea again. I have sent you one of my sermons for perusal, and I assure you that when alone sometimes I enjoy sweet communion with God; and he don't let me be short of ideas, such as they are. Perhaps the mill-hands would be glad to hear anything from

the Captain. Please, dear Sir, give my love to them all. I am happy to say that my wife and family remain well, and desire, with myself, their very best respects to yourself and Mrs. Smedley. I trust that she, with yourself, are quite well; and that the Lord will grant you both health for many years to come, is the sincere prayer of yours

Affectionately,

JAMES DUDDRIDGE."

I could fill a volume with such testimonials, and some of the writers are gone where "There is no more sorrow nor crying, for the former things have passed away;" they have left this world with affectionate expressions of regard for us, and the prosperity of our work. Could the possession of wealth, of estates, of high or even noble acquaintances, compensate for the pleasure of having ministered to such? No! Try the Lord's service ye wealthy people; for Christ says, "Lay not up for yourselves treasures upon earth, where moth and rust doth corrupt, and where thieves break through and steal: but lay up for yourselves treasures in heaven." In vain have I solicited several wealthy manufacturers to have a free hospital for their workpeople, or even baths only; they have had proof of the efficacy of the treatment from many of their workpeople having been restored to health at my free hospital. They shrink from the trouble and responsibility, and the familiarity it necessarily results in. There is a good deal of labour and self-denial to go through in attending the sick and diseased, but if the heart is in the work they will find it a rich mine of pleasure and satisfaction which other pursuits cannot give. Our stewardship will have to be brought to be weighed in the balances, and worldly riches and the world's honours and titles will not weigh in our favour. "Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me," will bring great joy to those who hear it.





Chatsworth, the seat of the Duke of Devonshire.

### DIVISION III.

## Baths and Practice of Hydropathy.

WITH ILLUSTRATIONS.

**T**HE DRIPPING SHEET.—Take a linen or coarse cotton sheet, and dip it in water; the patient, undressed, puts it on the same way as a cloak, leaving the head out, and rubbing the body well from one to two minutes, the chest first; then, after dipping the feet in cold water, put on a dry sheet, in a similar way, and well dry the body: dress immediately; very delicate persons may dry the body with a dry blanket instead of the sheet. For very delicate patients, the water may be sixty or seventy degrees, but cold is the best generally; after drinking a little cold water, take exercise. Another method is to have a sheet dipped

in warm or hot water first applied, and then follow with one cold, or nearly so; if liable to determination of blood to the head, or low vital power, stand in a foot bath of hot water while going through the process. It cannot be too often impressed that all violent shocks should be avoided. The dripping sheet will be found a good tonic application for a fatigued system, and a very safe and mild remedy, as the cold sheet quickly becomes warm on the body, and causes a healthy glow through the frame. Two cold dripping sheets, one after the other, are very refreshing; sponging the head with cold water before having the dripping sheet, or a wet cloth round the head is useful in cases of stout persons. Any of the baths may be taken not only without danger when the body is in a state of perspiration, but with more advantage.

**WET PACK.**—Spread a macintosh sheet, or thick quilt, on a mattress, over that one or two dry blankets, then take a thick cotton or linen sheet, (coarse cotton, which is best, may be bought for about 4s. per pair) dip it in cold water, and wring the water out as much as possible, which is best done by two persons, the sheet being doubled, one taking hold of each end and twisting it until the water is well wrung out; then the patient undressed lies down upon the back on the wet sheet, holding the arms up while one side of the wet sheet is thrown over the body and tucked in. Then the patient puts the arms down by the side of the body, and the other part of the wet sheet is thrown over, and tightly tucked in. The blanket and macintosh are then brought over, on each side in a similar manner; next a bed is put on the patient, or plenty of clothes of any kind, sufficient to keep the body warm; put a small pillow on each shoulder, or some clothes to keep the warmth in about the throat and shoulders: and in case of sore throat, before lying down wring a napkin out of cold water, double it into fourfold, lengthwise, wrap round the throat, with a length of flannel, one and a half or two yards over it, then lie down on the sheet and go on with packing. It is important, in packing, that the sheet be well wrung out,\* that the patient be tightly packed in the sheet and blanket, with plenty of clothes on, and the wet sheet and blanket closed round the shoulders and neck. The wet sheet must not be left in a lump

\* I use a pair of rollers in a frame.



about the feet. Wrap the legs to the knees in a dry blanket before wrapping the wet sheet round; and if the feet are still cold, apply a hot water bottle to them. After being in pack one hour, or one hour and a quarter, take a cold shallow bath, or dripping sheet at 70 degrees, if delicate, standing on a hot pad or in hot water for the dripping sheet. dress quickly, and then take moderate exercise. A good addition to these directions is to dip a napkin in cold water, and after wringing the water out, wrap it round the head while in the pack; this prevents any tendency to head ache, and is very soothing. Wet packs may be repeated several times in the space of twelve hours in cases of fever, cold, constipation, inflammation, or violent bilious attacks. In cases of scarlet or typhus fever, the sheet should be wrung out of hot water. In cold, or ordinary stomach disorder, I find no plan so efficacious as wet packs repeated every day or two, twice a day. I now mostly use the fomenting can in packing, filling it with hot water, and laying it on the blanket over the chest and bowels; this aids the good effect of the pack greatly. Wet sheet packing should seldom be used by delicate persons with low power of re-action. Fomentation, as under, or towel pack, is far better in such cases; still there is no process so efficacious as wet packing for bilious attacks, bad cold, indigestion, and constipation of bowels; but if the body is too low for re-action, and a person is cold after a pack, a steam bath, hot bath, or hot sheet, followed by a cold sheet, will soon restore the animal heat. For persons in health, a wet pack once a week is a good preservative of health.

Some persons will naturally shrink, from feelings of delicacy, in adopting this treatment; but a pack may be managed without any unpleasant exposure of the body, by having the blanket and wet sheet over it laid on the mattress, the attendant then to retire, or turn aside, whilst the person undresses, and lies down on the back upon the wet sheet, and pulls one side over the body; the attendant can then go on with the packing; all the baths may, with a little management, be gone through without any indelicate exposure.

**FEVER PACK.**—For delicate cases, use two towels instead of wet sheet, one behind and the other before; after the patient has been in pack ten minutes, take the towels out, and have two other towels wrung out of cold water, to replace them; wipe the body with

wet cloth, go on replacing the towels every ten or fifteen minutes for one or two hours; then take a shallow bath, or tepid dripping sheet. Sip cold water during the time. This reduces fever rapidly.

The above we apply in cases where the patient is very low in vital power, allowing the towels to remain without replacing for one hour, and following with dripping sheet or shallow bath, 70 degrees.

**DRY RUBBING.**—This is an important application, especially where the vital power is too low to bear much application of vapour baths, fomentation, packing, &c.; we can get surface circulation by this process when we dare not attempt any other mode, and in all cases, whether of good vital action or feeble, it is highly beneficial, especially if the operator is strong and in good health, as the operator communicates a good deal of vital electricity. At Dr. Elliotson's Mesmerie Institution, London, they profess, and I believe with truth, to restore or relieve cases solely by this plan. For ordinary dry rubbing let the patient stand on a hot pad, or in hot water, and have a blanket thrown over the body, leaving the head out; rub the body under the blanket for ten minutes; if vital power is very low, as in some cases of consumption and liver disease, we rub with a little dry mustard, and leave the mustard on till the next bath.

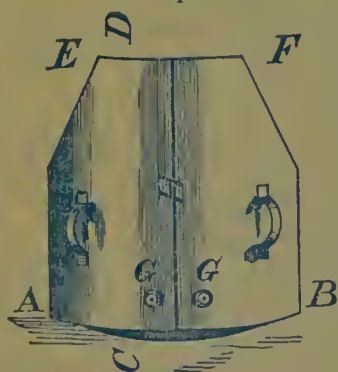
**TOWEL RUBBING.**—A plan for moderating the application of the dripping sheet, or where the person cannot rise out of bed, is to spread macintosh and blanket under the patient; then take a towel, dipped in cold or tepid water, according to the strength of the patient, slightly wrung out; gently rub the upper part of the body, and dry it: then cover the part, and apply in the same way, to the other portion of the body.

**PACKING LIMBS ONLY.**—This we practise a good deal in cases of rheumatism, dropsy, inflammation, paralysis, or numbness of limbs, taking a strip of brown calico, five or six inches broad, wrung out of cold or tepid water, and wrapping it round the limb, then a similar strip of flannel two thicknesses, and a strip of macintosh over all. Re-wet the bandages every two or three hours, same time sponging the limb with cold or tepid water, and keeping the pack on night and day until it has produced crisis; continue until the crisis is fully out, then merely put a piece of linen loosely round, and sponge after with

tepid water. This does wonders in expelling morbid matter, and restoring vitality. Varicose veins are by this process entirely cured.

**DRY PACK.**—Lay two or three blankets on a mattress; the patient then lays down upon them undressed, and pack in the same way as the wet sheet pack; a piece of macintosh cloth placed under the blankets, and wrapped round the body over the two blankets, is more certain to produce perspiration; the patient should remain in, after the perspiration has begun, fifteen to twenty minutes, afterwards take a dripping sheet, or cold shallow bath. Whilst in the pack a wet cloth should be kept on round the head, and a tumbler of cold water taken. The dry pack is to produce a greater degree of perspiration, and is useful in chronic rheumatism, or chronic liver cases, but from the length of time required in most cases we do not often use it, preferring the spirit lamp.

**FOMENTATION.**—This is a very beneficial application which we have adopted the last two years. First, spread a macintosh sheet on the bed, then two blankets, on which the person with only the trunk part of the body undressed, or wholly undressed, lays; one of the fomenting flannels, previously wrung out of hot water, is placed under the back, and another over the chest and bowels; then bring one side of the blanket over, put the arms down, then lay the hot can on, and put the other side of the blanket over, then the macintosh; the person lays quietly from three quarters to one hour, and will often go to sleep. Afterwards wipe the trunk with a towel wrung out of cold water, and dress, or have a cold



10 in. E to F; 16 in. A to E; 14 in. C to D; 18 in. A to B. 1 in. thick, slightly arched. H, a joint with wire, to divide the can for separate use. G, screw plugs to fill the can with five pints of boiling water.

dripping sheet, or cold or tepid wash over.

This bath is very mild and very efficacious in chest, liver, and stomach affections, and may be frequently used without any danger of weakening the frame, and with only partially undressing. A wet towel

round the head, and feet in flannel, and sipping cold water is used in some delicate cases. The fomenting flannels are each made of six thicknesses of flannel, twenty-one inches square, and quilted to keep them straight.

The use of this fomenting-can would often prevent serious illness, and is a perfectly safe stimulant and counter-irritant, drawing blood to the surface, and thereby relieving internal congestion, the cause of so much mischief; hot mustard and water foot and hand baths repeated, we find does wonders in relieving congestion, and no harm can possibly arise from their frequent application.

**DRY FOMENTATION FOR BOWEL COMPLAINT.**—First put the legs in hot mustard and water fifteen minutes, then lay in bed wrapped in two dry blankets, and have the hot can over the bowels under the first blanket for half an hour or more, and no wash after.

**VAPOUR BATH.**—The patient, undressed, sits on a chair, a blanket is put round the person and also round the chair, leaving out the head; then coverlids or rugs, or anything of the kind, are put over the blanket. Take care to close the cloths well round the throat and on the floor. Then take about a gallon of boiling water in a pan, put a hot brick in the water, or a piece of hot iron, or hot coals; place the vessel under the chair, and perspiration will soon be produced. During the bath some cold water should be taken by sips, and the forehead bathed with cold water with a cloth or sponge. After the patient has perspired about ten or fifteen minutes, all the cloths must be thrown off, and a cold dripping sheet or shallow bath given. The heat should not be strong at first, and this is easily regulated by raising the blanket a little from the floor for a short time. The feet in a pan of hot water, and a napkin wrung out of cold water, frequently renewed, held to the chest, prevents headache. This bath is very useful in all cases of over-fatigue and chilliness of the frame, and may be used with great advantage, in keeping the body in order, morning, noon, or evening; for rheumatism and paralysis it is very efficacious. At my establishment I use a box for the purpose, into which steam is conveyed from a boiler, and such boxes my carpenter will supply to any one on application. Patients may soap themselves in these vapour baths to advantage. I use this

bath every morning five minutes for weeks without any weakening effects.

**SPIRIT LAMP**—Is given in the same way and followed by the same cold bath as the Vapour Baths, only instead of the hot water and brick, a lighted lamp, or saucer, containing spirits of wine, or rectified spirits of naphtha, which is cheaper, and quite as good, is put under the chair. I use gas, at my free hospital. This bath is of great use in reducing fat and hardening the muscles. I have reduced a patient sixteen pounds in nine days, and brought him from a state bordering upon apoplexy, to walk ten miles without fatigue, taking away all uncomfortable feelings, especially in the head. With perfect safety it may be used once a day, for a week or more. In the forenoon, or afternoon, is the best time. A wet cloth should be put round the head and a tumbler or more of cold water administered by sips, during the operation, and the feet in a pan of hot water; a napkin wrung out of cold, should be held to the stomach while in the bath, and rewetted, in cases of venous apoplexy it is very efficient.

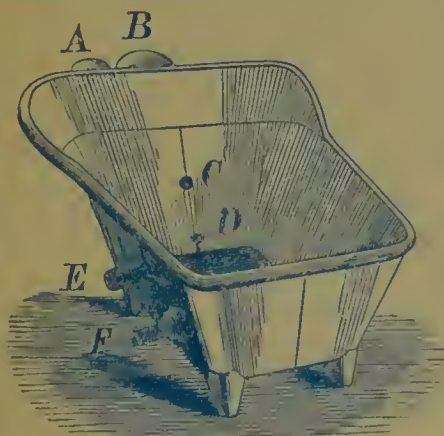
Instead of a spirit lamp, a saucer, with some spirits of wine, will answer as well. This bath is useful in first stages of dropsy, and chronic liver disease, and is not weakening.

A macintosh, or coarse linen petticoat, painted with a coat of common paint to make it air-tight, is very suitable for the steam bath or Spirit Lamp; it should be sixty inches long, seventy-two inches wide at bottom, and thirty-six inches at top, with hole for the head, and a narrow piece of calico and a string to draw round the throat. When the person is seated undressed on the chair, put the petticoat over the person without any blanket, and the hot brick and water, or spirit lamp, underneath. A blanket is useful to be laid on the floor round the petticoat to keep the heat in. I supply this macintosh petticoat to patients, and in the case of a major in the army, I had one made that would serve for wet packing as well.





**SITTING BATH.**—A common wash tub or any vessel about twelve inches deep will do. Put in five or six inches depth of



12 inches deep in front, 16 inches back, 14 inches square in bottom inside, 21 inches width in front and back.

at F, or having it to the depth of E, pouring in water at A or at B, for higher part of the spine, the water coming in at C and D, and running off at E or F. A cold sitz bath for ten minutes, or running cold five to eight minutes, is very refreshing after fatigue or mental exertion, and the habitual use of it, as often as convenient, will tend to produce good action of the bowels, and healthily brace the nerves of the spine and brain. We use it, twenty to thirty minutes, for constipation, cold, in summer, and at sixty-five to seventy in delicate cases—a can of warm water in first, and reduce it to cold, or to sit in the empty bath and have it filled gradually, is preferred by sensitive persons, with the feet in hot water. For piles the water should be sixty-five to seventy, twenty minutes, and a minute cold, and wear wet body bandage night and day.

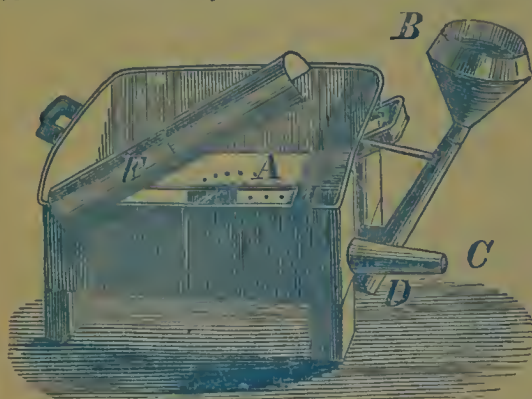
**WASHING SITZ.**—This bath is the most convenient for ordinary use, or when travelling. I have some water put in over night, and on rising I spread my macintosh sheet on the floor, set the bath in the centre, sit in it with the legs and feet out for five or eight minutes, covered over with a blanket, and afterwards soap the body over well with common yellow soap rubbed on a small flannel pad, standing in hot water, or not, as convenient; then sit in the bath, and with a common West India sponge, sponge the body, squeezing

water; sit down in it, covering the person over with a blanket, either leaving out the head or not; entire covering keeps in the bodily heat better when the person is entirely undressed; or it may be managed without entirely undressing; gentlemen only taking coat and vest off, and drawing a sheet through the trowsers. I have invented a running sitz, which can be used either as an ordinary one, or as a running sitz, with a small quantity of water, by taking off screw

spongefuls of water over the shoulders, then stand in the bath and sponge the legs and arms, step out, hold the head over the bath, squeeze spongefuls of water over the back of the head and the face, then dry with a linen or coarse cotton sheet: the latter may be had for about 4s. per pair at any draper's shop, and are mostly used for bed covering by the labouring class; if the body is dried with a napkin, much bodily heat is lost, and often injuriously so. An additional efficacy and luxury when using the sitz bath, is to have the feet either in hot mustard and water, or simple hot water; I generally prescribe this to invalids, and it is also of great use in all cases, but is not essential.

**SOAPING.**—I cannot overrate the necessity of well soaping the body often with the common yellow washing soap, it should be done very frequently, and standing in hot water is a luxury, then sponge the soap off with cold water; the seven or eight millions of pores in the skin pour out waste matter, and if not kept cleansed on the surface the absorbents, as I have remarked, take the waste matter into the blood again, causing incalculable mischief.

**LADIES' RUNNING SITZ.**—I have invented this bath which can be used without any undressing. It should be in every lady's room, and



17 in. wide, 18 in. long inside, 6 in. deep in front, 9 in. in back; reserve E 2 in. wide, 19 in. whole height in front.

if used as commonly as the wash hand basin, would prevent weakness of the spine, and the long list of distressing weakening ailments all females are liable to. It has saved lives already by stopping hemorrhage, which no other means made use of could effect; for this purpose it is used every one or two hours, two minutes at a time, with cold water; and this may be done with safety by the most delicate. Ordinarily it is used as a sitting bath, for five, ten, or twenty minutes, and may be made running cold by an attendant pouring in water at the funnel B; F is

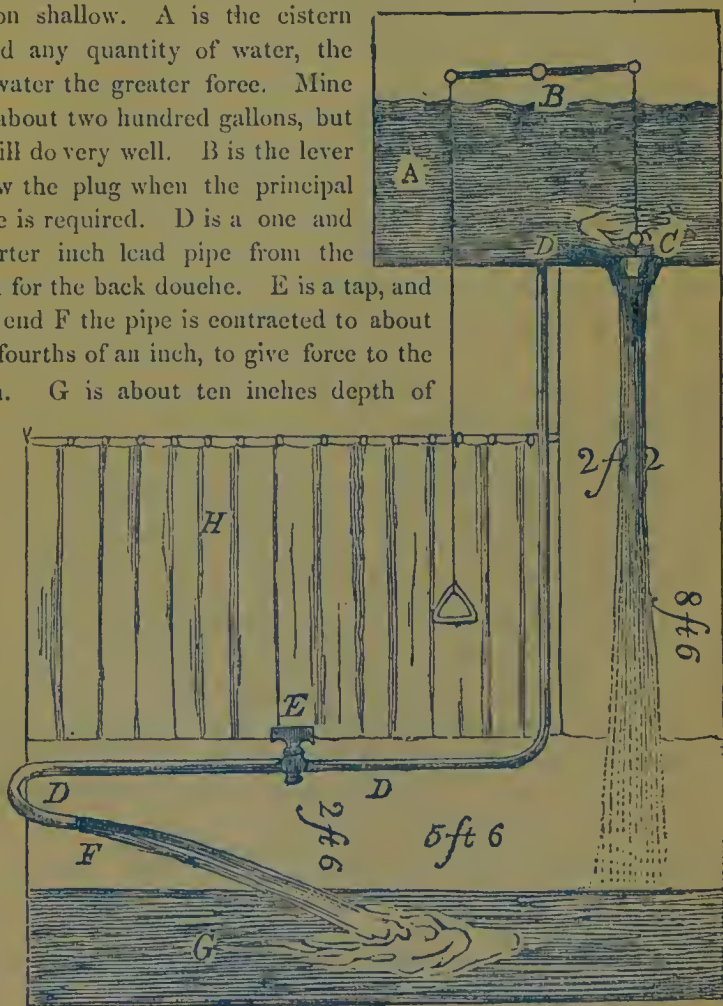
the cover for the reserve E; D is the pipe to carry the water to A, which rises up in the centre, and passes off through the reserve at E, and the pipe C. The reserve is to prevent the water coming over the front, when sitting down. After walking or becoming heated, great benefit will be derived by its use with cold water. For piles, the water should be 65° to 70°, used twenty minutes at a time, and one minute cold, wearing wet body bandage night and day, and if not warm, put flannel over, especially at night.

DOUCHE BATHS.—There are various modifications of these applications; the principal is the one, which from a cistern, containing one or two hundred gallons of water, a short pipe, contracted to  $1\frac{1}{4}$  inches at the point, with a valve inside the cistern, worked by a lever, allows the water to come out with considerable force from a height of eight to twelve feet. This bath is one of great service in many cases, and for ordinary use it is far more efficacious than the shower bath, causing less shock, as the water, as soon as it touches the back, shoulders and hips, produces instant reaction and warmth; it may be used with perfect safety by any one in ordinary health, and when the body is in a state of perspiration it is a luxury and highly beneficial. It may be used too with great advantage when the body is in an ordinary state, taking care that the stream does not come upon the head or chest, but on the shoulders, spine, hips, and bowels. Wash the head in cold water first, or put on a wet bandage; ordinarily I use it for about twenty or thirty seconds, or while fifty can be counted; it is stimulating and strengthening; standing in hot water adds to the efficacy and safety of this bath, but is by no means necessary except where there is congestion of the head, or very full habit.

In cases where there is any affection of the lungs or liver, a flannel pad wrung out of hot water, should be previously tied round the chest, or a dry chest compress put on, and stand on a hot flannel pad or in hot water. In cases of *Chronic Rheumatism* in the knees and ankles, the patient is wrapped in blankets set in the bath, and the douche allowed to fall on the parts affected; this is to rouse action in the parts, and will often succeed when no other plan will. Another plan for delicate persons with affection of the spine, or rheumatism in the shoulder, is to sit in a shallow bath with the water ninety degrees,

having a pipe of cold water playing on the parts affected until the water in the bath becomes too cold for the patient to remain in. Then again, we have gutta percha tubes attached to the main pipes or eisterns, to spout on any particular part wanting vitality; the patient being undressed and partially enveloped in blankets.

**DOUCHE BATH, OR DOUCHE AND SHALLOW BATH COMBINED,** I have for personal use. It is very effective, and far superior to the common shallow. A is the cistern to hold any quantity of water, the more water the greater force. Mine holds about two hundred gallons, but fifty will do very well. B is the lever to draw the plug when the principal douche is required. D is a one and a quarter inch lead pipe from the cistern for the back douche. E is a tap, and at the end F the pipe is contracted to about three-fourths of an inch, to give force to the stream. G is about ten inches depth of





water. H is a curtain to prevent the water splashing over the side of the bath. The way I use the bath is to step in with ten inches depth of water, draw the curtain, and then turn the tap E on immediately, sit down in the bath, the spout going at my back. I rub well with water, and throw it up into the face. Then turn round and let it spout on the throat and bowels, but not on the chest. The principal douche I use separately, with no water in the bath, except what runs in from the column, letting it go on the spine, shoulders, and bowels, but not on the head or chest. A large tap should be provided to allow the water to keep running off when the large douche is used; I have also hot water laid on for a hot bath, with cold douche after.

**ASCENDING DOUCHE.**—This is in the form of a water closet seat, the water spouting up from beneath, and the person using it regulating the current by a tap on the seat. This bath is very useful in cases of weakness of those parts the water comes in contact with, and can be used without the slightest risk by the most delicate persons.

**DRIPPING SHEETS IN COLD WEATHER.**—I spread my macintosh sheet on the chamber floor, and have a cold dripping sheet on rising from November to May, a good re-action is more certain, and for ordinary practice in winter it is the best; and washing sitz or cold shallows in warmer weather. A cold dripping sheet at any time of the day when fatigued is very refreshing. As I have before remarked, it allays feverishness, and is easily managed by putting the wet sheet on like a cloak, and with the hands out rubbing and drawing the sheet backwards and forwards over the back; I never have any assistance in taking dripping sheets, or drying, or putting on bandages; by performing the operation myself I sooner get re-action. I cannot speak too highly of the good and safe effects of the dripping sheet.

**HOT PLATE.**—I have a galvanized iron vessel, 4 feet square and 3 inches deep, with some cross-bars inside, dividing the space into parts 6 inches square, this is laid on the bath-room floor filled with hot water and a flannel pad over it for patients to stand upon when taking dripping sheets, and being dried after the shallow; the use of this is a luxury, but not necessary; the cross-bars are to strengthen the vessel to bear the weight of a person standing upon it; there is of course a screw plug on the surface, and one in the end to fill and let out the water.



**STOMACH PACK.**—When the stomach is very irritable it is best to lay in bed and remain perfectly quiet, taking no food, but sipping cold water; have a towel doubled and wrung out of cold water laid over the stomach, and over that a good thickness of flannel or blanket to preserve the animal heat, rewet the cloth every ten minutes, and take nothing but water until sickness is stopped, if even a day or two, as no harm will arise from abstinence from food so long as the stomach is irritable. In some severe cases we have found this the only remedy.

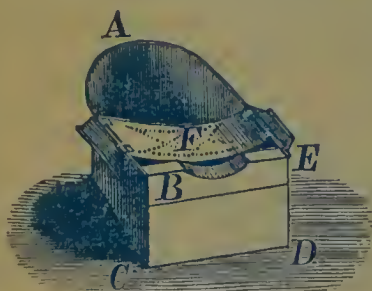
**SHALLOW BATH.**—This is a very useful bath, and more tonic than dripping sheet; the bather lays down in it half filled with water, and



5 feet 6 inches long, 26 inches wide, 13 inches deep.

rubs quickly the legs, arms, and body; or an attendant assists. It is best for the bather to use action in rubbing well, as it aids the good effect of the bath. One or two gallons of cold water should be poured on the spine before coming out, but not necessary.

**HEAD BATH.**—An excellent application for soothing and cooling the head. The person lies down on the floor with a pillow under the top of the shoulder, and the back of the head in water at F, which is a piece of perforated zinc connected to the sides of the bath, with elastic; the head presses this down into the water. Where there is much excitement of brain, it should not be quite cold, and often renewed, as the water soon becomes warm. For extracting



heat from the head, it may be used twenty to thirty minutes at a time, and not unfrequently brings a soothing sleep while being applied. The forehead should be sponged at the time with the same water; or a wet cold cloth over the forehead frequently rewetted. A cold foot bath after a head bath is good for reaction.

**HEAD BATH.**—10 inches wide C D, 13 inches long B A, 6 inches deep inside. B is a reserve, 1 inch wide, with a loose cover, to hold any water that may slop over, and so keep it from running down the bath. A tap should be inserted at E, so as to let water run through on pouring more in to keep the water cool.

**FOOT BATHS.**—Walk about in cold water a depth of five or six inches, or stand in a tub, stamping with the feet from five to ten minutes; then rub dry and take exercise. I walk in the wet grass or snow, or on the high road, barefoot, for half an hour or more, with advantage; and in crossing a brook, I take off my shoes and stockings, and after passing through the water put my stockings on again without drying the feet. No harm, but great benefit would result from these operations being more generally used. The tight fitting boots, with elastic tops, are highly injurious, keeping in perspiration. Foot baths are a tonic, and very beneficial; they take away headache, and draw blood to the feet, and may be used by any in ordinary health without the least risk. If there is any affection of the lungs, or determination of blood to the head, or low power of reaction, have the water ninety degrees for five minutes, then sixty-five or seventy degrees for five minutes; this is derivative and soothing, and helps sleep; if feet or legs are first put into hot mustard and water for ten minutes then use the cold, greater beneficial effect will be produced in cases of congestion of the brain.

**EYE BATH.**—Eye-glasses are sold at the druggists, the application of them is as follows: for weak sight without inflammation, fill the



glasses with water 60 degrees in a stooping position to keep the water in, then raise the head with the glasses fitting over the eye, then open the eye-lids to allow the water to come in contact with the eye-ball. Keep the glasses on five minutes, then change the water, and while changing let the eyes face the strongest light; go on applying water

in the same way five minutes longer, repeat this three or four times a day, after a few days use only cold water. If convenient pack the forehead with a piece of calico wrung out of cold water, and oiled silk over during the operation. Inflamed eyes apply as follows:—Use head-bath cold or rather tepid, foment the eyes and forehead with hot flannel pads out of water as hot as can be borne while in head-bath for ten minutes, then pack the forehead as above with wet calico, and apply the glasses, with water 70 degrees to commence with three minutes, next three minutes 60, three minutes cold, and in changing the water open the eyes and face the light; when the inflammation is subdued, then apply same as for weak eyes; for accidental injury apply the same.

The patient must not be alarmed at the eyes becoming much blood-shot by the use of the glasses at first, this is producing the desired effect by stimulating the circulation, and will subside in due time. At bed-time foment the eyes with hot water five minutes, then pack as above with wet calico over forehead, and two pieces of damp spongio over eyes for the night. The ordinary method of shading the light from weak or inflamed eyes is highly injurious, and often results in permanent injury. As inflammation of the eyes is a secondary symptom, showing inflammatory action in the stomach or other viscera, diet and other precautions are absolutely necessary to recovery; avoid all stimulants; adopt the diet recommended in this work, wear body bandage, and take the usual cold or tepid dripping sheets, and sitting baths for ordinary health. If there is much mucous inflammation shown by the red tongue, &c., more active general treatment will be required before the eyes will be restored to healthy action.

**COLD FEET IN BED.**—An invariably successful and perfectly safe remedy in all cases, is to put on a pair of cotton socks, wrung out of cold or tepid water, with a pair of thick lambs' wool over, and to sleep in them. Wash the feet in cold or tepid water on rising. We apply cotton gloves wrung out of water, with dry woollen over, and in some cases wear them night and day; they draw circulation to the hands, to the relief of other parts.

**BACK WASH.**—The person sits on a board across the sitz bath, or a tub, in which is some cold water; the attendant takes a towel, dips it in the water, and throws it open on the shoulders and back drawing

it downwards, and keeps renewing it in the water; apply this for five or six minutes. It is very strengthening and refreshing to the back, and a very mild application; and for cases of head affection, have feet in hot mustard and water during the operation.

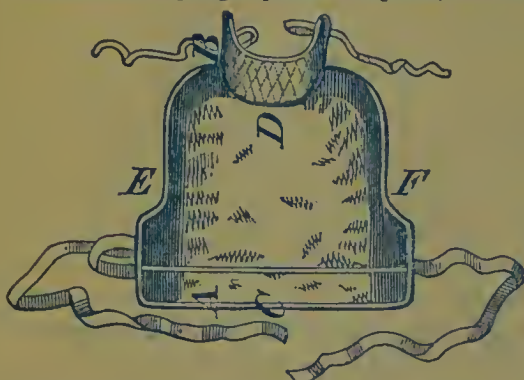
**BODY BANDAGE OR WET COMPRESS**—The ordinary material used is linen, but this, in many cases, remains cold, and is then injurious. We use coarse brown calico, two and a quarter yards long, thirteen inches broad; one yard of it should be two thicknesses, one and a quarter one thickness, covered with oiled silk, or thin macintosh cloth. The double calico part, wrung out of water, wrap round the body, and then wrap the other part covered with the water-proof over it. Or three yards of calico, two thicknesses, and thirteen inches wide, will answer. The waterproof aids the good effect of the bandage; and the reason why bandages can only be partially used at water establishments, thus causing great delay in restoring vital action, is owing to the very imperfect bandages used, often really doing more harm than good, which will be the case if a feeling of warmth is not produced. Body bandages can be thrown off at any time without any substitute, and without any fear of taking cold.

The body bandage is of great importance, and very beneficial in constipation of the bowels, liver, stomach and kidney affections, pregnancy especially, and internal irritation. It should be re-wetted morning, noon and night, or oftener, if hot, as it will have more effect. If there is inflammatory matter in the system, a rash or pimples will probably come out, and so produce a good effect, acting as a counter irritant. When this is the case, and the rash becomes sore, or discharges, wear the bandage only at night wet, on going to bed; and should it be hot in the night, re-wet it; morning and evening wash over the parts with warm water and brown soap. This bandage will not produce a rash in a healthy system, and it is only where there is inflammatory matter in the system, which is dangerous remaining in, that any crisis will be produced; it is very useful at all times, in soothing the stomach, bowels, liver, and kidneys, and may be worn by public speakers and ministers, on occasions of much exertion, with great benefit; however much the bandage is worn no injury will arise. I wear it for weeks together when I have much work to go through; and never have any rash or crisis in consequence. It also tends to allay thirst, and



is used in some quarries and foundries for this purpose, and for support to the back. In cases where much medicine has been taken, the stimulating effects of the baths and bandages throw it off in the crisis, on the non-vital organs, the legs, arms and surface of the body, and so entirely replaces the vitiated tissue by new and healthy formation. Wherever there is disease in the system, there the crisis will show itself, relieving the parts most affected.\*

**CHEST COMPRESS.**—We use different kinds and sizes.—The shorter chest spongio-piline compress, with collar, is invaluable in all



13 in. from E to F, 10 in. from C to D, 14 in. from A to B—full size 6 in. longer, collar 14 in. long, 3 in. wide.

chest complaints, bronchial affections, or of the lungs. The collar is made of two thicknesses of calico, covered with oiled silk, and quilted to keep it straight. The spongio should be bound with tape and have two crossings of tape at the back, to keep it from stretching, and should be worn night and day until the complaint

is removed; it will not weaken the chest, but on the contrary, greatly soothe and bring external warmth and circulation, and so relieve the internal congestion. The collar is wrung out of cold or tepid water, and the spongio sprinkled or sponged with the same, but not to drip, or the compress will feel cold; re-wet morning, noon, and night. Spinal compress will be useful at the same time, as the apex of the lungs comes up to the point betwixt the shoulder and neck. The above chest compress we ordinarily use with body bandage and spinal compress; sometimes, however, the body bandage cannot be used for want of vital heat, and then we find the full size spongio chest compress, which is merely six inches longer, is the best. Either of these chest compresses, or the calico one described below, are excellent preservatives to wear in case of exposure to cold, or on occasions of public speaking,

\* See Crisis treatment



in winter, and may be thrown aside without danger of taking cold. The half chest calico compress is made of a similar shape, but instead of spongio, there is first calico, two thicknesses next the chest, then one thickness of flannel, and outside oiled silk, lined with one thickness of calico to strengthen the silk. Some persons will find the full size calico compress lighter to wear, and will act on the bowels as well as the chest, if they can keep it warm; but it should be observed, that if *any bandage feels cold, it will do harm, rather than benefit.*

**WET PACK FOR THROAT.**—Many a valuable life amongst the ministers of the gospel and public speakers would be preserved by the use of this compress, saving them from bronchial disease, or consumption, by the occasional use of it, and packing the throat at night as follows:—Take a napkin, wring it out of cold water, fold in four lengthways, wrap it round the throat, and two yards of flannel over it, or a pair of lambs' wool drawers, or flannel petticoat, if no flannel wrapper at hand; however often this is used, it will not injure or relax the throat. I always take the precaution of sleeping in it after public speaking. I have been instrumental in restoring and preserving many a valuable life by advising this application. It is well known that the majority of earnest ministers of the gospel and other public speakers become invalids, and are obliged to give up their work from bronchitis and relaxation of the throat and uvula; packing the throat and using the respirator after sermons or lectures, would most effectually save them. I can speak from long personal experience. One point must be noticed, the flannel wrapper should be thick enough to keep a good warmth up; and in the morning sponge or wash the throat well with cold water. In obstinate sore throat or quinsey, keep it on night and day, re-wetting once or twice in the night, and every half hour in the day time. I have known bad cases cured in twenty-four hours. Spongio-piline\* could be used in day time, being less bulky, but there must be good heat kept up.

**SPINAL SLAPPING.**—This we find of great use in healthily stimulating the great nervous centres in the spine and brain. In cases of congestion of brain and general nervousness, let the patient sit on a board over the sitz bath, with or without feet in mustard and water,

\* Spongio-piline may be bought wholesale of G. Trimley, 41 Queen Street, Cheapside, London; and at most Druggists.

100 deg., the attendant then with some cold mustard and water applies it down the spine, gently and quickly applying the open hand, one hand following the other from the nape of the neck all the way down the spine, frequently dipping the hand in the mustard and water, the mustard not to be washed off, but wipe dry with a towel; the top of the spine should have extra rubbing. The whole operation, five to eight minutes at a time.

**WASHING OVER THE BOWELS.**—In some obstinate cases of constipation of the bowels we order the bowels to be washed with hot soap and water by a flannel pad at bed-time for a few minutes, then wipe the soap off and rub a little cod liver oil in for five minutes, then put on a dry flannel two or three thickness and sleep in it; this we have found answer when other means have failed, and especially with those far advanced in life or weak; it should be done in bed. One lady, seventy-two years of age, came for liver complaint and long constipation, and who had this application for some weeks, with slight bathing, got entirely well, and has been since in excellent health.

**RESPIRATOR.**—This is a most useful invention, and may be used without any risk. It is of the utmost importance to every one going out of a warm room into a cold or damp atmosphere; if put on before leaving the warm room, a temperature of seventy or eighty degrees is breathed, which effectually prevents attacks of bronchitis, inflammation, or sore throat; and in cases of bronchial affections, I recommend its use during the night. I have seen and felt the most important benefit from this, as it is manifest there is risk either of inducing or increasing inflammatory action in the fine air tubes and vessels of the lungs, by the sudden change of breathing a temperature one moment seventy degrees, and the next thirty or forty degrees, and sometimes far lower. Maw and Son's, of Aldersgate Street, London, I have found the best; price 5s. each, or post free for 5s. 4d.

**COD LIVER OIL.**—This I consider very beneficial where it can be taken to agree, but the large quantity almost invariably prescribed clogs the liver, and does more harm than good. One large tea-spoonful well mixed in a wine glass of cream, taken immediately after breakfast, and after tea in the evening, I find a proper quantity.

**SWEATING PROCESSES.**—*Spirit Lamp, Vapour Bath, Gas jet Hot Water Bath, 90 to 105 deg; Blanket Pack, Wet Sheet, Body and Towel Pack, Hot Sitz.*

To all the above in *italic*, it is more effectual to have the feet in hot water during the application, fomentation can over pad, both back and front of body, whilst rolled in blanket.

**TONIC PROCESS.**—Douche various sizes and length of time, cold dripping sheets, cold sitz, especially running sitz, together with cold spinal rubbings, and cold water poured down the spine, cold shallows and pail douches; towel back wash, sitting over sitz.

**SLIGHT TONICS.**—Cold mustard and water foot and hand baths, cold and tepid head baths, cold wet towel rubbing, tepid shallows with cold pail douche, tepid sitz with feet in mustard and tepid water, and cold spinal rubbings whilst sitting on board over sitz, and cold water poured down the spine the while; cold back wash, running sitz 70 deg. for five minutes whilst feet are in hot water.

Very modified applications of the above for very delicate patients.

A very gentle vapour for five minutes, then throw a dripping sheet over the body before coming out of the vapour box. Usual sitz 90 deg. for five minutes, soaping the parts out of the water whilst in, and keeping the feet in hot water during the time, then wipe over all the parts wetted and feet also with a cold wet cloth, then rub dry; chest rubbing either with cold water, mustard and water, or cod liver oil, from three to five minutes whilst in tepid mustard and water. Two minutes cold running sitz without undressing; this bath is invaluable for many female complaints: soap the whole frame over with a flannel pad and warm water, and then quickly sponge it off with cold, using very little water, hot foot and hand bath for five minutes, then wipe them over with a wet cold cloth, mustard and tepid foot and hand bath for five minutes, simply rubbing them dry and warm afterwards. Wet towel rubbing half and half, first the upper half of the body whilst in bed, and dry, then putting on the woollen vest perform the same operation with the lower half of the body; the towel can also be dipped in tepid water, fomentation on chest or bowels, warm, not hot, and then wiping over parts fomented afterwards with a damp towel. Steaming

any affected part of the body separately by means of the opening in vapour box, or pan of hot water with hot bricks in, and the limb on a narrow board over the pan, and a blanket over all; for nervous patients this steaming is very useful to nape of neck for a short time, keeping the head well wetted during the process, rubbing the nape of neck with hand, and mustard and cold water for five minutes, whilst the feet are in tepid; mustard and water is a very soothing process for nervous patients; pouring cold water over nape of neck for a few minutes is very refreshing; mustard poultices applied to the soles of the feet, when the mustard is not permitted to touch the sides of the feet, may be kept on night and day, and not any pain be felt and yet great good obtained, such as drawing down the blood from the head and promoting general circulation; mustard poultices also applied to nape of neck, between the shoulders, and on windpipe and bronchial tubes, and also on pit of stomach, and on region of the liver, are very useful remedies, but the skin should not be suffered to break. Wet and dry socks worn all night are very useful in producing healthy circulation. Cod liver oil is very generally useful, but it is only judiciously taken when limited to one teaspoonful, and well mixed with a little cream or milk, and taken immediately after breakfast and tea. In severe cases of constipation rubbing the bowels with cod liver oil ten minutes twice a day has succeeded in giving relief.

**HOT DRIPPING SHEETS** are very useful before wet pack, in cases where there is low power of reaction: and at other times, when coming home with wet clothes, or having been wet, and clothes dried on, a hot dripping sheet, followed by a cold dripping sheet, is a very mild and pleasant operation, and would always prevent cold being taken. Or cold dripping sheet alone would always restore the circulation.

**FOMENTING PAD IN STEAMER.**—In all cases, except of full habit, a flannel fomenting pad, wrung out of hot water, held to the stomach and bowels, while having a steamer, is very beneficial and agreeable. In cases of full habit, a towel wrung out of cold water, held to the stomach, is best,



Haddon Hall, the seat of the Duke of Rutland.

## DIVISION IV.

### Application of Disease.

CASES.—It was my intention when first I thought of this work, to have given a large number of cases, but experience in my establishment has convinced me that it will not be advisable to do so. So frequently have patients come to me with Dr. Gully's book, in which a great number of cases are inserted, and the applications described,—and said such a case was just their own—this feeling and that symptom was exactly described,—when in fact their case and the one described bore no analogy. Except in giving some general idea how such are treated by our applications, I think it would only be liable to mislead patients by giving many particulars of cases. The development of disease varies so much in different sexes and constitutions, that when there is any-



thing more than ordinary derangement of the health, none but practical observers can form a correct opinion of the causes of disease. I have seen much injury done to nervous patients by studying cases in books without the requisite knowledge.

#### OVERWORKING THE BRAIN AND NERVOUS SYSTEM.—

This is a large class; and just now in my writing closet the proprietor and manager of a popular country newspaper is consulting me about his state: he says last night he got no sleep, his mind was running on a hundred subjects, and he had no control over it; to day, of course, his nervous system is wearied and excited, with not much probability in the present state of his bodily health of having a better night. He has come from home for a short trip for change; it will do him some good, and help him to carry on a little longer, meantime the lamp of life is burning with more than double speed to wear the frame out twenty or thirty years sooner than God intended. On examining the case he informs me he has gone to his office on Friday morning at six o'clock, and stayed till Saturday afternoon, without rest; now surely if a man studies the nature of his frame, and the conditions of health, he will see this is a really reckless spendthrift course which no considerations can justify, and, moreover, I believe to be really a trespass on God's laws and man's responsibility. How can such labour be compatible with the calm consciousness of the high mission God has given man to fulfil? And, besides, even the object which man aims at is lost, for if even wealth is gained and an independency, there is no power of enjoying it.

I know it will be said by many, "I have no choice, I have an office in the counting-house, or in the shop, and must go through the work required, or resign my situation, and what can I do?" Alas! that this should be the case from the avarice of employers, or their ideas on the necessity of requiring such overwork because others in the same line of business require it, and therefore they must do the same to meet them. I know cases where the clerks and warehousemen, or shopmen, of wealthy professing christians, who give largely to charities and the building of places of worship, and whose assistants in their business have lost their lives from confinement, bad ventilation, and the everyday pressure on the nervous system, without any means of complying with nature's laws, in the way of baths and rest of brain. I see such

assistants drop out of the counting-house or other places, and other young men step in from the country to be similarly used up. Let employers, and especially those who profess to be christians, look to their responsibility in this. I have at this moment more than one or two in my recollection who have been cut off in the morning of life, leaving young widows with young children to struggle on the journey of life with the thousand difficulties that beset them; but their late husbands' rich employers still use up others, still give money to charities, still live in style with their liveried servants, and give good dinners. The Lord says, "Many shall say unto me in that day, have we not prophesied in thy name, and in thy name cast out devils, and in thy name done many wonderful works, but I will profess unto you I never knew you, depart from me, ye workers of iniquity." I believe the standard which passes in what is called religious society will not pass with the Lord, who never approved of composition in religious duties, giving with one hand what has been wrung out of the bodies of assistants, with the other. I do not condemn all indiscriminately, for some, I believe, have not had their attention drawn to this important subject, and as I shall have to remark further on, when the means are at hand some are too indolent or careless to use them. I leave this to reach those whose soul will, I am sure, convict them if they do not stifle their consciences and turn to the customs and opinions of society for justification; wretched delusion if they do: they know well the customs and laws of this world will not be allowed to be put in plea in that higher court to which we are all hastening.

The first part of this little work shows the constitution of the bodily frame, and its motive powers, and the dependency of the organic part of our frame on the vis vita, or power of life for existence; lower this power to a degree by over-work and improper or insufficient nourishment, and the breath of life which the Creator has breathed into man and made him a living soul, is expelled from its earthly tenement: the dust returns to its parent earth, and the soul to God who gave it its mission, and to give an account of its occupancy. Such is the feeble and transitory nature of the tenancy of the body, that we see apparently slight and silent causes cut the connexion, and turn the tenant out with little notice; and how many thousand tenants live in an uncomfortable and even miserable tabernacle. This should not be the case, nor would

it be if mankind acted on the sole principle of living to God, and to fulfil their high and noble mission.

First, teach mankind to know God and their great Mediator, then teach them the nature of the body in all its marvellous structure; let them be impressed with the fact, not merely an idea, but the solemn and undeniable fact, that they are responsible for the use they make of their frame, and of the faculties it possesses, and which alone can be kept in a state to perform the grand mission it is charged with, by obeying the conditions of health. If employers did this they would not themselves be using up this precious body for money or transitory and worthless honours, they would not require of their assistants to use up their noble faculties in their service, until they are become so benumbed that they have often to perform their services more like machines than spiritual beings.

I write this from dear bought experience of the necessity of attending to this bodily machine, if any comfort is to be enjoyed of even bodily existence; for the mind, however highly endowed, is dependant for a deal of its happiness on the state of the corporeal part. For many years I worked fourteen to sixteen hours per day, and often the night too, taking no precautions in the way of baths, and I never knew a day's health for twenty years. Now, however, by attention to diet and baths, I can go through as much labour with perfect ease and excellent health. I never have a holiday: my thousand workpeople, free hospitals, hydropathic establishment, writing traets, and sabbath lecturing, &c., forbid it; nevertheless I know real enjoyment, with quiet nerves, and a mind without any corroding care. I believe God's word,—that all who serve him sincerely are his children, and that he will keep them from all evil and in perfect peace. The care I leave to my Master, according to his command.

Having said this much, I will now endeavour to point out some remedies for preventing the distressing state of disordered nerves and functions of the body.

If employers and assistants would be at the trouble to use a very simple plan of bathing, they would be amply repaid. First, employers should find the means, by appropriating a room or chamber for the purpose, with a few sitz baths, one or two shallow baths, a steamer, some sponges, and sheets. This book will shew what is necessary for hydro-

pathic baths, (the expense of which is trifling), and I will gladly furnish the articles at cost price. I will also send an experienced bath man, or attend myself, if possible, to give instructions in their use, if needed. Ten or fifteen minutes, or even less, would suffice for most of the baths. The body refreshed would soon repay the expense incurred, by rendering the individuals so much more capable of performing their duties with efficiency. I have been so convinced of its good policy, both as a duty and as profitable in a pecuniary point of view, that I have provided my workpeople with baths, and also a cooking-house and servants, who prepare their meals, and I supply Scotch oatmeal porridge with golden syrup or milk for fivepence per week; I also supply a pint of tea or coffee with sugar and milk at one half-penny per pint, or they can make their own. I give my factory hands an additional half hour each morning for religious worship, and for hearing any important events going on in the world. We all assemble (those on the premises number about 350) in a room in the winter, and in a marquee during the summer, from half-past eight to nine. The mind and body is refreshed,—time is given for reflection that we are made for nobler purposes than merely working for the support of the body, and that there is a state approaching in which there are no factories, no avaricious or unfeeling masters, nor any thoughtless or indifferent to the welfare of those around them, and where the factory hand may be found amongst the first: for the apostle James says, "Hath not God chosen the poor of this world rich in faith, and heirs of the kingdom which he hath promised to them that love him?" Many a collier, labourer, or factory hand are now here numbered amongst the redeemed, they shall shortly be translated to where the weary will not only find rest, but inconceivable happiness and for ever. "Be patient therefore, brethren, unto the coming of the Lord. Behold, the husbandman waiteth for the precious fruit of the earth, and hath long patience for it, until he receive the early and latter rain. Be ye also patient; stablish your hearts; for the coming of the Lord draweth nigh;" and thank God that all may come who will come and drink of the water of life freely.

Our daily summer morning services in the marquee amongst the beautiful scenery and surrounding woods will never be forgotten by those attending them, and long will they remember the glad chorus of the birds, warbling their morning songs in unison with our own.



I believe all our lives have been prolonged and made happier by these services. Even now the recollection of them in years gone by, dwells on the mind with pleasure, and I hope we shall always continue them while we stay on earth. Every now and then one of our number takes their departure to those blessed regions we read so much of, and their happy spirits, I often think, may be present with us. The greater efficiency of the workpeople, by these relaxations, is beyond all doubt, and a feeling of family compact is produced, which greatly lessens the trials of labour.

On the score even of pecuniary profit I can recommend employers to give their assistants opportunities for these exercises; it would have, I am sure, an important effect on their characters and habits; their over-wrought wearied feverish frames want rest and enjoyment, and they too frequently seek it in practices that aggravate the evil effects of fatigue. The effects of dripping sheets, shallow baths, or steamers, as prescribed in this work, would soon be evidenced in the vivacity and cheerfulness of the bathers, the blood would be well circulated, the hot skin relieved, the functionary action of the viscera kept up to a healthy standard, and increased powers of usefulness, and a will to use them, would be the result; and the result to the employer would be first, the great satisfaction that he was acting as a steward ought to do towards those God has given him in charge: and the second, that it is the best policy to have his assistants as full of life as possible to aid him in his enterprises.

I have stated before what plan I use, I however repeat that the simplest plan of baths where there is not much accommodation, is to have some water in a sitz in the bed-room overnight, on rising spread a macintosh sheet on the floor to save slops; sit five minutes in the bath with legs out with a blanket thrown entirely over the body, then have a cold dripping sheet, or washing sitz, or cold shallow; the dripping sheet is best for winter, and at all times the least trouble, and generally most efficacious, and dry with a sheet, not with towels, as the body is too much exposed and animal heat lost; if time soap over with common yellow soap, and a small flannel pad; or a hot dripping sheet followed by a cold dripping sheet, or a five minutes vapour and cold dripping sheet or cold shallow, is very refreshing. A vapour followed by a cold dripping sheet or cold shallow may be taken with much



benefit at eight or nine o'clock in the evening; a sitz bath five to ten minutes, 70 deg. in winter and cold in summer, before getting into bed, with the feet in hot water or without hot water, often relieves the head and gives sleep; but if suppers, tobacco, and alcoholic drinks, pastry, &c., are not totally discarded, no person can be in a safe state of health. I intend further on to give a sketch of a room for bathers.

The use of the wet body bandage I resort to a good deal whenever I have any extra work or over fatigue, I throw it off without any substitute, never taking cold by so doing, and however much it is worn it will do no harm; this wet body bandage and sitz bath are my sheet anchor, when hard pressed with mental work, and does wonders without any possibility of harm: occasionally I wear the wet bandage through the night, but then a flannel wrapper should be worn over it.

**HYDROPATHIC PRACTICE.**—Hydropathic practice is too much understood and practised as a system of immersing the body in cold water, drinking large quantities of cold water, with all the hitherto strange methods of applying water in douches, wet sheets, and the various modes of not only washing the body, but of washing the vitality out of it. The "cold water cure," I repeat, as it has been, and is now often practised, is an outrage on the principles by which the body is kept in health, and life; and the exhibition of this by Hydropathic Practitioners sets the medical profession very justly against it. They correctly judge that the application of cold water to the majority of the cases of their patients would only increase congestion, and lower the power of the viscera to perform its functions. They hear of some absurd applications of cold water to rouse power where it does not exist, and they judge if a hydropathic practitioner will commit one blunder against all scientific and correct knowledge of the nature and functions of the human body, that he will commit others, and so they condemn hydropathy and hydropathic doctors in toto.

Hydropathic practice is of recent introduction into this country, and in Germany too, where Priesnitz first accidentally came into note. Priesnitz was a peasant, and had no medical education, and, what was a greater defect in him, he despised scientific education, and the result of this was that, with a powerful means of restoration in his hands, he used it by trying its effects in cases without any sound reasons why

such applications should succeed. He tried the practice in some cases and succeeded; he tried the same in others, which not only did *not* succeed, but did injury or destroyed life. Priesnitz's was a system of experiments without a correct diagnosis of disease, or of the varieties of constitutional peculiarities. This is unjustifiable, for if a practitioner does not act upon principles deduced from his knowledge of the nature and action of the human frame, it is mere charlatanisin to attempt to cure disease. I never give a bath without looking for a good result, from the consideration of the various organs or nerves implicated,—never as an experiment.

Hydropathic practice has been taken up by some who could not succeed in their medical profession, and who, consequently, were not the best men to bring a good stock of scientific knowledge of physiology and anatomy to bear upon the subject. Others, again, who have undoubted physiological acquirements of the first order, are overwhelmed with their practice; and it is utterly impossible, with their present plans of practice, to carry out the minute detail as much as is required. The same care and judgment is as necessary in applying water as in compounding prescriptions, and watching, as a good physician does, the complications and phases of disease. Large establishments, where the charges are such as will afford to pay for scientifically educated assistants, should have that assistance in proportion to the number of patients, and also all apparatus and bathmen in proportion. In hydropathic practice there are so many manual operations that in reality it approaches very much to the processes in some manufactories, with the physician as the proprietor, with his overlookers; and, moreover, to carry hydropathic practice out with success, it should be in an establishment, and also be confined to the establishment. A room for sewers, with their stock of flannel, spungio, calico, oil silk, tapes, ribbons, and patterns, are as necessary as baths. I have a room, and a number of young women always at work, as also tinmen to make baths and invent others. Then "*the feeding the animals*,"—as a physician, alluding to my patients, remarked to me, he could not condescend to do—is in this system as necessary as directing the baths. The clothing, also, it is of the utmost importance to see to. I find delicate, cold-blooded patients with cold feet and hands, come with their fashionable, thin clothing, and light cotton stockings on, in cold weather. *No treatment can succeed unless*

*all these points are attended to.* Hydropathic therapeutics, as it is scientifically termed, or, in plain English, the hydropathic mode and principles of cure, is put before the public as a sound, hygienic, nature-restoring system of curing disease, and bringing the body into its normal or primitive state. Its professors profess to discard all attempts to bring the body into this state by the forcing or deadening system of drugs, blistering, setons, bleeding, and the thousand other forms in which mankind have been tortured and slaughtered for generations. There certainly is no lack of minute and elaborate methods employed in ordinary medical practice as to these matters, but often a total disregard of diet, clothing, and habits. Now, if the hydropathic physician stands upon the punctilios of his profession, and declines, as one who offered to join me did, to have anything to do with the unprofessional and common employment of seeing personally to the application of his physic, in the shape of baths, bandages, food, clothing, and habits of life, it is impossible he can do justice to his patients; and until hydropathic practice is studied in the bath-house, and looked upon by the practitioner as an office requiring the most particular and personal attention to the manual processes, or as a superintendent over his assistants, he will not bring the system in its wonderful health-restoring principles, in its true light, before the public. The practice of giving baths at private lodgings, by bath-attendants going their rounds from one house to another, and the doctor only seeing the patients perhaps once a-week, is utterly unlikely to give a patient a fair opportunity of cure. They cannot have proper bath apparatus, nor the attendance they ought to have. In the simple matter of giving a dripping sheet, the patient is made to stand in the cold water in the bath, while it is given, to save slops on the floor, this is bad, or the sheet is partially wrung out, which makes it less effective. A bath may not have suited the patient,—there is no bath-attendant to refer to, nor the quantity of water necessary. I should not dare to prescribe baths under such circumstances, except to those who merely require home treatment. I saw a case in point at Malvern last year, when on a flying visit. I was consulted by a friend, whose sister, a delicate lady about twenty-one, with little blood in her body, had been ordered to have a wet pack daily at her lodgings. They had to rub her for hours after the pack, to get circulation, and from the time of having the cold wet pack one day, to the one next day, she was

never warm; yet the patient and attendant thought it must be persisted in, as it had been prescribed. This was highly dangerous in this case. The attendant had no machine even to wring out the cold wet linen sheet, and the doctor was only to be seen once or twice a-week, and that week he did not see the patient once; when he did see her, he ordered the pack only every other day; the same effects were produced, and packing was stopped. The lady remained three months at a heavy expense, and returned home rather worse than better. No wonder her medical man at home denounced such inposition and ignorance in attempting to cure disease. The husband of a lady has just come from near London to consult me on his wife's case: she, too, has been at the "*cold water cure*." It is a case of severe chronic rheumatism, making her a cripple. Nothing but cold water has been applied for ten weeks, at an expense of £40, and she is worse, and no wonder. Whenever one of my patients does not become warm in a pack, or after a cold sheet or any cold bath, does not get reaction, a vapour bath is given, or a hot and cold dripping sheet, and packing stopped until there is more power; and, besides, it is not safe to leave a patient in pack without an attendant near; my packing is done in the bath-house, where attendants are always by, and is so contrived that it is quite private: my patients can converse while they are in pack, and nervous feelings are prevented; to many it is a very formidable operation to be bound up fast in sheets without power to extricate themselves, and great danger may result to nervous persons by being left alone.

It is really doing the public injustice in serious cases by undertaking them at lodgings, and where they cannot have experienced bath-attendants to resort to any hour, day or night. I am very cautious in giving first packs in delicate cases, and in all I have the wet sheets wrung out by a pair of rollers, and I use coarse cotton sheets, not linen, and wrap the legs, to the knees, in a dry blanket, with macintosh sheet underneath for packing, and a chest-can with hot water, as described. Where there are a large number of patients, the physician should have qualified assistants in proportion to the number, and a qualified assistant should not have less than £500 per annum, with his board, and the whole bathing processes should go on under one roof. This would easily and with little expense be done on the plan of my baths. In one of my bath-rooms—95 feet long by 14 wide—we give over two hundred baths



per day, including packs, fomentations, shallows, washing sitz, and the various other processes. There is not the least effluvia in the room, from its being well-ventilated and warmed, and floor tiled, and with wood grates, so as to be dry for walking upon with the bare feet, and to allow the water to run off. Packing beds should be emptied occasionally, and the contents renewed, as the effluvia from the person is often exceedingly offensive, and will be retained in the bed, and the blankets and sheets should be well washed frequently. Persons should never sleep in the same beds that wet packing has been performed in.

I make no pretensions to the knowledge of physicians who have gone through the dissecting-room and the usual laborious course of educational training; but I can successfully compete with them in curing, and that on certain principles, as the state of my establishment and the testimony of numbers who have before tried hydropathy in vain for cure, testifies. Few physicians will condescend to attend to the minutæ I name as absolutely requisite for carrying out this practice as it ought to be done with justice to the patients. I have been trained to business habits in my manufactory. I have to see personally into the minutæ of every operation, and act on known principles. I do not consider for a moment whether it would not be compromising my position as a master by even seeing to the state of the floors, the dirt and grease, and the ventilation of my factory, for I know I could not long keep the lead in my branch of business as I do, were I not to see to these matters of detail, as well as talking with my bankers and wool merchants as to the prospects of the money and wool markets. Far from despising scientific knowledge, I have considered it to be my duty to read and study Physiological works every hour I could spare for six or seven years past, and also to keep up with new works published on the nature of disease, &c.

I hope to see hydropathic practitioners with high physiological and anatomical knowledge content with £5,000 or £8,000 per annum, and spending the surplus above this in engaging young surgeons and physicians to help them, in proportion to the number of patients. Let them then hold a cabinet council every other day, and compare notes, and in any critical cases every day. This plan would soon put hydropathy in the place it ought to occupy in the estimation of the public.



**RHEUMATISM.**—This is a universal complaint, I cannot call it disease, but a symptom of disorder in the nutritive organs. By some it is considered to rest in the blood: others, and I think with more correctness, believe the cause of pain, inflammation, and swelling, is owing to the sheaths of the muscles and the sheaths of the nerves wanting the serum which is necessary to allow the muscles and nerves to move easy and freely in these sheaths, so that any mode of living or habits of life by which the blood is impoverished, prevents the supply of this serum to the sheaths, (as the serum can only be formed from the blood,) and the muscles and nerves consequently move in comparatively or altogether dry sheaths, which soon produces pain and inflammation, and eventually if not relieved, destroys the vitality of the sheaths altogether and sets the limbs fast. In all my practice in rheumatism, I have acted on this principle, and have good reason to believe it correct from the cures I have seen by treating it as only a symptom of impoverished blood, and of lowered vitality. I apply steam, calico and spongio bandages, and hot and cold baths, both large and small douches to the parts affected, but not with any expectation of curing unless at the same time I can get the tongue clean, and the stomach and bowels in good order, by the means I elsewhere prescribe. Rheumatism will never be cured while the tongue is red or furred, showing chronic inflammatory action in the mucous membrane lining of the stomach, liver, and bowels.

In rheumatism, then, the first essential point to attend to is the state of the stomach, and to begin a strict system of dieting, disarding tobacco in any form, for this is the primary cause of the crippled state of thousands by the double power for mischief it contains in poisoning the blood, and lowering the vitality of the nervous system by its narcotic power; then pastry, as well as all ale, porter, wine, or spirits, which only increase the inflammatory action already so troublesome; little or no flesh meat until the tongue is in a natural state—all condiments are bad in these cases, as pepper, mustard, or acids. The simple diet recommended in this book, with the hot soaping and hot and cold dripping sheets, wet pack twice a week, or in case of rheumatic fever, two or three times, for one hour each time, every twenty-four hours; sheet for packing wrung out of hot water and tepid dripping sheet after each pack, wearing the wet body bandage night and day, taking care it is

made warm by adding a flannel wrapper. A hot water bath, 105 degrees, ten minutes, followed by a tepid sheet or wash down, the legs in hot mustard for fifteen minutes; then wrap the person in blankets, and put a fomenting can over the stomach and bowels half an hour. Sleep in cotton socks wrung out of tepid water, and lamb's wool over. Bandage any parts affected with wet strips of calico, well wrung out, with macintosh and flannel over to keep them hot, or spongio piline will keep warm when calico will not. The more the limbs are exercised while there is any rheumatism, the worse they will become: the muscles and nerves working in comparatively or altogether dry sheaths.

If my theory is correct, as to the cause of rheumatism, it will be very evident that blistering, which weakens, and heating lotions which increase inflammation and neither improve the quality of the blood, must be injurious, and they will be found, in every case, to be so. I have had scores of cases which have been seriously injured by these applications, and some such applications have made cripples for life. I have had many desperate cases which have been so injured, and although some have yielded to the treatment, the majority have had the vitality so destroyed in the parts, that I could only tell them they were hopeless cases; as to their bodily state—heating stimulating medicines, or heating lotions and blistering, are the standard medical practice, according to the code laid down for cure by the Surgeons' Hall Examiners; and so all doctors who have qualified there must abide by it, although I challenge them to produce a case of radical cure, or one in which the ordinary practice has not done injury; even scarifying is sometimes practised: a labourer sent to me by a clergyman had had his knees *fired* by a surgeon, as is usually done on horses, the poor fellow's knees are made stiff for life; this is not the only instance I have had of burning the parts affected.

SCIATICA, or rheumatism in the sciatic nerve, which takes its rise in the hip, and runs down the back of the thigh and leg to the foot.\* Great numbers are cripples from this cause, and not a few have been made so by the unnatural methods used by surgeons for their cure. Nothing but restoring the nutritive powers can ever give life and power to the limb, and blistering, lotions, or scarifying, only aggravate the disease and increase the inflammation, which not unfrequently causes

\* See engraving.

thickening of the cartilage in the thigh joint, and thrusts the bone out of the cup, putting the limb what is called, out of joint,—never to be got in again. The applications named in the preceding article are what we use. I have just heard of a notable plan invented by an Irish surgeon for the relief of Sciatica, which is, to introduce a hollow probe through the muscles to the nerve, and apply morphia. This is only the usual practice of attempting to benumb pain by drugs, and treating the poor body as a carpenter would do a box out of repair; unfortunately, however, for the poor body in such hands, it has highly sensitive nerves and a wonderful net-work of blood vessels, which will not bear similar treatment.

Several years since I had a very remarkable case of rheumatism, a Mr. Hirons, now a bookseller at Exmouth. I had little expectation of seeing him even relieved. His case was declared entirely hopeless of either cure or mitigation by his doctors; and they were honest in telling him so; for on the principle of allopathic treatment (which is grounded on forcing or rousing weak organs to act, by means of stimulants and counter irritants, or quieting feverish or inflammatory action by narcotics,) there could be no prospect of any good result with a frame worn down to a skeleton, and the side of the head actually resting on the shoulder, from the muscles and nerves of the neck and upper part of the spine having given way, and become unequal to its support. He had been in this miserable state a considerable period; and a short time previous to his arrival at our Establishment, had been in bed three months in one position, not daring to stir, from the excruciating pain it caused in the spine. He was about twenty-eight years of age, always of regular habits, with a healthy constitution, but had been compelled, in attending to his business as a draper, to stand in a shop between currents of air, in cold weather, and without any fire. Confinement and cold brought on indigestion; this, of course, weakened the vis vitæ, or power of life. The frame then began to feel the effects. Drafts acted upon the shoulders and neck, causing rheumatism; this went on until all the frame sympathised, and he could no longer attend to his duties. The usual plans were tried to make the machine perform its offices, but it could not be made to act. It would only answer to mild nursing,—attention to the natural nutritive powers, in the shape of rest and warmth—plain but nutritive diet—mild water and steam application

to the skin, and damp spungio night and day on the parts affected, which acted as a constant poultice. Had these plans been tried first instead of whipping the poor body with drugs, blisters, and lotions, I have no doubt the patient would have soon been restored; for, in the desperate state above described, by God's blessing on our treatment, he was entirely cured. When he first came to my Establishment, when ever he had to move, he supported his chin with his right hand, while with the left he raised his head, causing exquisite pain in the spine, every time bringing out perspiration over the frame. He is now in excellent health.

**CASE OF GROSS MISREPRESENTATION.**—The following case I feel it necessary to notice, to refute the malicious reports which have been circulated in Derby and elsewhere, intended to prejudice the public against Hydropathy. Mr. Thompson, silk broker, of Derby, brought his wife to my Hydropathic Establishment; he came without any intention of taking treatment himself, as he was apparently in good health, stout and florid, rather inclined to determination of blood to the head. I advised him to have some slight treatment, merely to cleanse the pores of the skin. He was not stinted as to food: on the table, for breakfast, there were tea, cocoa, bread and butter, eggs, Scotch oatmeal porridge, and new milk; at dinner, beef, mutton, vegetables, with a variety of puddings and stewed fruit; evening meal same as breakfast. He stayed a fortnight, and returned home and resumed his business habits. Shortly after his return he observed a pimple on the calf of the leg, and being hot weather, and his business requiring him to walk about the town a good deal, the pimple became inflamed and began to be troublesome, until one day having had an unusually fatiguing walk he was unable the next day to move out. After trying some measures a surgeon was called in, who ordered eighteen leeches and plain diet. The inflammation, however, did not yield to these means, and after a time a physician was called in, who immediately said too great a change had been made suddenly in Mr. Thompson's diet, and ordered him "every thing that was rich and good," the physician's own expression and adding, the patient must have mutton chops to breakfast, and turtle soup every day for dinner; some of the best old Port wine was also provided for the patient, and partaken of but moderately. The patient, as a matter of course, could not long stand this diet; a hearty



man would have had enough of such diet every day. The "good things" were discontinued in part. The legs began to swell; nature's powers were fairly, or rather unfairly, taxed to get rid of inflammatory matter forced upon the system by this rich living, without power of absorption. Patent elastic stockings were ordered by the physician, and put on to keep down the dropsical effusion. Where the water was to go when pressed out of the legs I suppose the physician did not consider, but the stockings were taken off as symptoms of dropsy in the chest came on, and in a few weeks Mr. T. died, seven months after he had left my Establishment. I was never informed until the last of his state.

Now this case is one we should have had no difficulty whatever in restoring. Mr. T. was a sound man, a steady man of business, and given to no excesses, but from want of proper attention in bathing and keeping the pores of the skin in good order to let out the waste, he had accumulated in his system morbid matter, which affected his head, and the pimple was a merciful provision of nature to throw off this morbid inflammatory matter on to the non-vital organs, and if it had been properly treated, and diet continued as the surgeon ordered, it would have been a safety-valve for his constitution. It was a great error to put on leeches, they stopt nature in her efforts at relief. But the fourteen days' simple baths he had at my Establishment had no more to do with the pimple, which was not larger than a mustard seed at first, than Tenterden steeple had to do in causing the Goodwin sands.

**CONSUMPTION, DISEASE IN THE LUNGS.**—This never takes place except there is first what is commonly called a bad stomach or bad digestion. The lungs are perforated by thousands of minute air tubes, calculated at 30,000 square inches of surface,\* these tubes are also lined with minute air vessels, which make the body of the lungs almost a mass of these pipes and air vessels; the tissue or flesh in which they lie is of a very fine structure, differing from the coarser fibre of the flesh, or what is more properly termed muscle, of other parts of the body. Now it will easily be understood that where so much delicate machinery is at work, and in so fine a structure, the materials must be good to renew this structure, which is every day wasting and being replaced by new formation, as in every other part of the body. Persons

\* See engraving.



of weak digestion, or from poor or insufficient food, make of course impure blood; out of this the fine structure of the lungs has to be made; nature applies it, tries it, and finds it will not stand the wear, and then tries to expel this morbid useless matter by forming tubercles and abscess, and so throwing it off. The formation of abscess and tubercles are efforts of nature to throw off disease, and in thousands of cases a cure is effected, the parts of the lungs where these operations have taken place are destroyed, but an artificial lining is formed called a cicatrix, where the disease has been, and which makes good the damage by cutting short the tubes around the seat of tubercle and abscess, but by this the extent of the tubes and capacity of taking in air is diminished, and such subjects will not have the power of lungs they had previously; nevertheless, thousands go through life with good health and live to an old age who have thus had their lungs seriously diseased. Out of 150 bodies dissected in the Hospital at Paris, 125 showed that disease of the lungs had existed, were cured, and the persons had died from other causes.

It is true many suffer from indigestion who escape disease of the lungs. Indigestion brings on chronic inflammation of the mucous lining of the stomach, bowels, and liver; this the system tries to throw off on to the non-vital parts of the body, as before noticed, in the form of boils, rash, shingles, abscess; and many have been saved from death by a broken limb drawing the inflammatory action from the more vital parts, but when the system is no longer able to throw off this inflammatory matter outwardly on the body and limbs, the weakest vital organs then give way, and the inflammatory action concentrates on the weakest parts, and serious disease sets in. Any who inherit constitutionally weak lungs are of course the most liable to consumption. Poor food, confinement in badly ventilated places, over-work, &c., brings on indigestion, red tongue, fever, then cough, showing the mucous inflammation is extending to the air tubes; and in the present state of medical knowledge a fatal crisis is very often accelerated by the application of blisters, and solution of cantharides, as counter irritants applied to the surface of the chest, which is taken up by the absorbents and carried into the blood, and to the already irritated inflamed lungs, besides draining away vitality when the blister "*rises.*" Good nourishing living is prescribed often without directions what is proper; flesh-meat, and

not unfrequently porter, ale, or wine, which only increase the inflammatory action are often ordered. Actual disease once set in in cases of naturally weak lungs, it is rare indeed they recover from the unnatural methods adopted for cure.

Whenever the tongue is red and swollen, white, or furred, persons with weak lungs should immediately take precautions before disease commences, and the only precautions they can take to be of use is not physisie, blisters, &c., but farinaceous and vegetable diet, good air, rest, and mild applications of water treatment; of homœopathic remedies I can give no opinion from not having studied them, and therefore I neither recommend or condemn them. When cough and expectoration has set in the disease has commenced, but generally in such a form that with care and attention recovery may be expected; but if in this stage the lungs are exposed to severe cold, or to the influence of stimulating food or liquids, fuel is being supplied to the fire, and the vis vita, or power of life, is fairly or rather unfairly beaten down. In taking in the air each time we breathe, an average power equal to a pressure of 4 cwt. is exercised, and in discharging the air 3 cwt.; now when the air tubes are inflamed the effect of this action may be supposed, but when we consider that the lungs cannot for one minute be at rest while life lasts, it is only a matter of astonishment their destruction is not far more rapid than we see the ease.

BRONCHITIS is very common, and persons with naturally strong lungs are often affected with it, and with them, by a little attention, the hacking short cough may be got rid of. But this is not so easily done by persons with weak lungs, for they are often unaware of the danger in their ease going on to actual disease of the lungs, or what is commonly termed consumption.

The term bronchitis does not alarm them, from their supposing it is altogether different from consumption; they are not aware that bronchitis is inflammation of the air tubes which perforate the lungs, and which inflammation, if continued, produces matter, nature's remedy, to throw off the inflammation when it cannot be thrown off otherwise; but if this mattering of the air tubes in the lungs goes on, it is easily seen that the body of the lungs cannot long resist the influence of morbid matter, and decomposition and change of the structure must be the consequence. Many physiological terms are very inapplicable

and vague, but having long been in use and adopted in works on these subjects, it is not easy to alter them. Consumption is a term generally understood, and therefore I use it, although it does not give a definite idea of any particular disease.

Bronchitis, or inflammation of the wind-pipe, which is of course the first large tube, and of the air tubes branching from it, is very common from a slight cold, from loud and long speaking or singing, or from the inflammatory state of the stomach. When it is only in the upper part of the wind-pipe, a little care soon cures and restores the ciliated membrane which has been destroyed. This ciliate membrane\* performs a very important office, it is on the surface of the lining of the wind-pipe, and in all the bronchial tubes except the most minute terminations. I can compare it the most easily to a man's beard a day or so old, and is spread in a mucous net-work over the parts, these small cilia or points are continually moving, and will show motion for hours when taken out of the body and put in warm mucilage. The office they perform is to keep the mucous, or slime lining the membrane, moving, so that the mucous does not stagnate and become offensive to the delicate cellular tissue and nerves on which it rests, for the very nature of the body is to keep all the living material changed and renewed.

Inflammation of the top of the windpipe displaces this cilia, the mucous then not being moved away, as it becomes deteriorated, irritates the cellular tissue and nerves on which it rests, and an attempt is made by cough to do what in health is accomplished by the cilia. This cilia on the top of the windpipe can be coughed up by a strong effort, and examined under a microscope. Now the cough which proceeds from the upper part of the windpipe can only be cured by the cilia being replaced; and to this end packing the throat with a wet wrung-out cloth and flannel one night and day, or damp spungio in day time, is the most effectual method of drawing out inflammation, and promoting a restoration of the parts. When the irritation is great we use a mustard plaister on the throat, and repeat it. This being a simple vegetable substance, can never do any harm. If the slight bronchial affection is neglected, the irritation and inflammation creeps down the tubes into the lungs, and then becomes serious. I had a serious attack in July last year from over-fatigue and Sabbath ser-

\* See engraving.

vices in my tent and in the open air. I expectorated a pint of matter in the twenty-four hours, the attack having gone on from acute to chronic bronchitis, and unless this had been stopped disease of the body of the lungs must soon have taken place. The remedy I used was to keep the throat red with mustard plaister, pack the throat at night with wrung-out napkin and flannel over, and washing the throat and chest with cold water on rising. I wore a half-chest spongio compress with collar, and a calico and macintosh spinal compress night and day, damping them twice a day, wearing body bandage from rising to noon only. On rising I had a soaping and wash over in water nearly cold, standing in hot water. Forenoon fomentation twenty minutes, not very hot, wiping chest after with wrung-out towel. Afternoon sitz 70 deg. ten minutes, feet in 105 deg. mustard and water. Towel body pack every other day, instead of fomentation. This continued for ten days, and then I relaxed the baths, and had only morning wash over and afternoon sitz, but still continuing chest and spinal compress until cough was entirely gone. I found it necessary to go to the heights of Malvern in July for change of air. Our private residence is low, and in the midst of large woods, and I could not go to my establishment, as perfect rest was necessary. I abstained from flesh meat and all stimulants, and, with the blessing of God, I was well in three weeks after I left home. Formerly I had these attacks, and the weakening effects of blistering and physie kept me in a weak state for a considerable time.

If the attack is in cold weather, it is necessary either to go to a warm climate—as Torquay or Penzance—or to keep in the house, wearing a respirator if at all exposed to the cold air, even in the passages in the house, as cold air will of course irritate the parts. The bedroom should be aired; and I found sleeping in the respirator on another occasion very beneficial. When bronchial inflammation has gone on from discharging light-coloured, whitish matter, to dark or green, and slimy slough, sometimes streaked with blood, then the disease has attacked the body of the lungs, and is called pulmonary consumption.

**CHRONIC PULMONARY CONSUMPTION.**—When this has taken place, and the body of the lungs are suppurating, or tubercles forming, we use simply the half-chest spongio and spinal, as above,



soaping the body over every morning with warm soap and water and then tepid wash down; standing in warm water; but if the disease is advanced, then without rising out of bed the upper half of the body is wiped over with a towel perfectly wrung out of tepid water; then, covering the upper part, have the same application to the lower part; soaping first is very necessary where there is perspiration. We have had some apparently hopeless cases of consumption which have entirely recovered; and in all cases our treatment will give relief and prolong life. Consumption takes place from various causes, and the remedies must be applied accordingly. Very frequently it is produced by a single exposure to cold, or going from a heated place to cold, or sitting in draughts, or sleeping with wet clothes on; and if the lungs are at all weak, inflammation of the body of the lungs takes place at once without bronchial affection, generally even without any cough. The darting pains are felt in the chest, and soon it is difficult to breathe.

In all these cases of sudden attacks of inflammation, our mild water treatment does wonders in a very short time. The fomenting can with fomenting pads should be immediately applied for half an hour as hot as can be borne; then towel pack, towels wrung out of warm water, lying in pack three quarters of an hour, and then have a shallow bath 86 deg. one minute, well rubbing the body while in bath. If the pain still continues, repeat the fomentation and pack until the pain is subdued; then put on full-sized spongio chest compress damped with hot water, and keep it on for a few days, or a week, until the attack has subsided. The half-chest spongio will then be sufficient, and this should be continued for several weeks, night and day, damping it morning and evening. If spongio is not at hand, the chest compress of calico, with flannel, is enough to keep in the warmth. After the first attack has subsided, on the first morning have a warm soap over, and wipe the upper part of the body with towel partially wrung out of tepid water; keep in bed, and as quiet as possible for several days. If the pain returns, resort to the towel pack or fomentation. After a few days, if there is no pain on breathing, have a soaping on rising, and tepid spunging down, standing in hot water; damp compress, put on a spinal one also, and still keep quiet. In the afternoon have a 86 deg. sitz ten minutes, keeping a hot pad to chest while in. On going to bed, have feet in 105 deg. mustard and water three minutes, then wipe the feet



with damped cold cloth, put on a pair of cotton socks, the soles of the socks wrung out of tepid water, and a pair of dry lambs'-wool over. Avoid flesh meat and all stimulants, or coffee or condiments; avoid milk as a beverage at first, it is too heavy; for the first few days a very small quantity of food is best, and that of a light kind. As the person recovers, a dripping sheet nearly cold, standing on hot pad, or in hot water, with hot pad to chest, or dry one while having the dripping sheet, may be applied on rising, and the sitz at 85 deg. without hot pad in the afternoon or evening. Great caution, however, must be used in not stimulating the circulation too much, either by hot or cold application until the circulation is restored. When the inflammation is on, the hotter the fomentation the better, but not so when the pain is subdued, as it would weaken and irritate. The respirator is necessary to be used in going out into the cold or damp until convalescent, and if the bedroom is cold, during night also. The great point to attend to at first, is to consider the delicate structure that is in a state of inflammation, or of so far weakened powers afterwards, that any calls upon it to bear the changes it will sustain when in health, is running great risk of destruction.

Inflammation in the lungs is dangerous and difficult to subdue, not only from being a mass of fine tubes, but from being constantly in motion and incessantly making such powerful efforts for the oxygenising the blood and throwing off morbid matter.

Compressed air baths are used to cure consumption. The patients, sitting in a kind of diving-bell, breathe air forced in by pumps. The pressure is intended to assist the weakened muscular power of the lungs in forcing air into the minute tubes and air vessels, and expanding those which, from want of natural power to force air in, have in consequence been closed, and so air has not been carried in its full volume to the blood-vessels for the absorption of the oxygen. I cannot recognise in this method any natural restorative principle, and I should fear from the forcing plan adopted in such a delicate organism as the lungs. I have had one patient who before coming to try our mild system had five or six weeks' treatment of the compressed air bath,—but I will never undertake another who has previous to coming, tried this operation. In the case alluded to, I believe the re-action from the great exertion of the lungs had laid the foundation of deeper inflammatory action.

We continually have cases come to us who have been permanently injured, and often hopeless of cure, from the delicacy and office of the lungs not being recognised. One such case has come to our free hospital this week, ruined by the doctor's treatment. The patient has been a cook, of naturally good constitution, and healthy family. Exposure to heat and cold, and the stomach out of order, prepared the system for a crisis which was sure to come, and only wanted the occurrence of having an extra dinner party to provide for. After a hard day's work, the system worn down, inflammation commenced, breathing became difficult; the usual plan of bleeding with leeches in the side, and with lancet in the arm, was adopted, afterwards blisters, calomel—everything to lower the circulation, and the power of life too. This was the poor woman's death-warrant, she could not get up her lost vitality; and now after two years' illness, during which time physic has been freely tried to give nutrition and power to the dilapidated frame, she is fast on her way to the grave, to which the same unnatural, unscientific, ignorant system of attempting to restore failing nature has, and is now, sending thousands by a painful, cruel process. Surely the nature of the wonderful, delicate structure, and the principles of nutrition, will be better understood.

The case of the present house steward of my Hydropathic Establishment is a triumph of hydropathy. His physician, after having tried his case and failed, sent him down from London to breathe his native air. He had hectic, with cough and expectoration, great weakness, and in much despondency. I applied our soothing, comforting system to his wasted frame, and with God's blessing, in six months he was able to engage a situation at the Crystal Palace works, standing its out-door duties in March without injury, and from that time to the present, about four years, he has enjoyed good health. The case is more striking, from an evident predisposition to consumption. Delicate care, and in fact the highest nursery attention, is the principle that should be acted upon in these cases. Warm clothing and mild climate in winter is very necessary. Exmouth or Torquay in Devonshire, or Penzance in Cornwall, are fine climates for invalids, far superior to any abroad, from the home comforts to be had, so necessary in these cases; the feeling of being within reach of friends, and amongst society of similar habits, all tend to allay anxiety. Fahrenheit's thermometer stood at 100 in the sun, in February, 1856, at Penzance; and

at Exmouth, my late patient, Mr. Hiron, had no occasion for a fire in his shop during the whole of last winter, so severe in our Midland Counties.

One very common cause of consumption in females is owing to the stoppage of the menses. In these cases the treatment should be with a view to restore them, and the lungs will be at once relieved.—For the treatment of Female diseases, Leucorrhœa and Menorrhagia, see farther on.

**THEORY OF INFLAMMATION.**—I have read most of the treatises written on this subject, but find a good deal of diversity of opinion amongst eminent writers. I venture to give my idea on the subject, from my own researches. Veins, by the profession, are thus designated from their conveying the exhausted blood to be renewed; arteries are also veins, but they convey the oxygenized blood from the lungs, by the left ventricles of the heart, to every part of the body for its support, thus non-medical readers are sometimes puzzled by the terms veins and arteries, which are, in fact, identical in form, but have different offices. The veins, as will be seen by the engravings, act by muscular contraction and expansion, and so force the blood forward, and are provided, also, where these muscular bands are placed, with a membrane stretching across the vein internally; this membrane is larger than the exact diameter of the vein, and is pierced with an orifice in the centre; the blood is propelled through this orifice, but if it is inclined to return, the back pressure closes the orifice and prevents its return, as shown in the engraving.

When the muscular power of the veins is reduced by various means, such as severe cold, drinking ardent spirits, simple weakness, violent contusions, or the nervous power of that particular part is lowered, (for it must always be borne in mind that this nervous power, or electricity, of which I have spoken so much, is the moving and primary cause of all circulation in the body,) the arteries and veins are unable to propel the blood freely through their course, at some particular part, either internally or externally, here, then, is congestion; all the blood does not get forward to be purified and renewed by the lungs, the liver, the kidneys, the glands, the skin, &c., and hence rapidly becomes of a morbid character, and unless the obstruction is soon removed, it becomes actually morbid, and poisons the whole system; decomposition

sets in, mortifying, that is, deadening the whole frame, and decomposition and death follows.

I have had a great number of cases of severe acute inflammation ; (for acute and chronic inflammation must not be taken for the same thing ; acute inflammation is the first stage, and this is what I am treating of, and is most dangerous to present existence : when the first attack has subsided, a slow, low inflammation may still exist, but not be imminently dangerous to life, this is called chronic,) my mode of treatment is first taking into account the lowered vitality of the nerves of nutrition.

In the first stages, and while the pain is severe, hot fomentations, as hot as can possibly be borne, with our hot pads and fomenting can where it can be applied, laying the patient in bed and keeping quiet as possible, sipping water not quite cold. Our plan of fomentation has a vast advantage over the ordinary method, as the pad and can will keep hot so long, and the patient is not disturbed, nor the parts exposed to the air by requiring frequent changes of the pad. We renew the pad and can by having others ready as soon as the patient feels the heat of the pad lowering ; after fomenting, until some relief is given, the next operation is a body wet pack, (see article Wet Pack,) the half sheet or towel wrung out of hot water put round the trunk, and over it blankets and macintosh, to keep in the heat well, and light wrapper round, the patient to lay still for half-an-hour ; remove the pack, rub the trunk with a towel wrung out of tepid water, or have shallow bath, 75 deg., well rubbing for one minute, and dry ; if pain not subdued, go on with fomentation again, and pack until it is, however long that may be, as the inflammation is certain to be subdued by these means. When the inflammation is subdued the patient very quickly rallies, and is well ; the obstruction is removed, the blood moves freely through the veins, the *vis vitæ* is raised, and the stomach calls urgently for food to repair the damage. I give only moderately, and often, and no flesh meat for the first twelve hours. One case, very severe, was thus cured, of a man sixty-five years of age, broken constitution, severe inflammation of the pluera. He wanted double breakfast in six or eight hours after, and at dinner-time was voracious for food ; in twenty-four hours he was quite convalescent. What would have been the consequence of the destructive system of drawing more vitality



out of the man by bleeding, blistering, and calomel? death, or a miserable existence the remainder of his term of life.

### PROVIDING FOR "CRISIS,"—OR SOMETHING WORSE.

—On the 19th of November I left home, with my friends, Mr. and Mr. Allen, the proprietor of Riber Hall, (with whom we sojourned in summer at his mountain home, 600 feet above the level of the river,) for Manchester, by the late train; we took tea, with eggs, before leaving, and arrived in Manchester at the Royal Hotel, at half-past ten o'clock. We found, in the commercial room, a number of gentlemen, all (with, I believe, only one exception), engaged in smoking cigars, and each with a glass of spirit and water. I observed to my friend, "Here you see how crisis is produced, and my time, and labour, and patience, and skill is taxed to counteract the effects of this unnatural mode of comforting the poor fatigued body, after the day's labour and anxiety." The exception named was a gentleman making a hearty supper of beef, pickles, pastry, cheese, celery, &c., with ale, and no doubt he would finish by following the example of those around him. "Anti-hygienic, with a vengeance!" I exclaimed. Not liking the atmosphere, and it being a very fine night, we strolled into the streets. I wanted to show my friend, Mr. Allen, who (although past the meridian of life, had never before been in a large town, nor more than sixteen miles on a rail previously,) some of the effects of the system of living he has so often seen me writing against in the drawing-room of his old Hall. On sallying out we soon met with business men who had evidently been similarly occupied as those we had left at the Hotel; none, however, showed the least signs of intoxication, but their haggard countenances told that their mode of life and occupations were not congenial to healthy development. My friend having never seen a billiard room, we turned into one: there the same countenances, some haggard and pale, others red enough, puffing cigars as a matter of course, and breathing the heated atmosphere charged with tobacco smoke and sulphur from the gas burners; we only stopped a few moments. A little lower down we came to a gin shop. We walked in at one door, and went along through a motley line of drinkers, some sober, some not so,—mechanics, squalid women in rags, gaudily-dressed prostitutes, some mere children, and out at the other



door. My friend, horrified at such a sight in a civilized country, exclaimed, "Why are they not put down!"

After a further round by the Exchange, now looking solitary and quiet, its busy anxious occupants of the day gone home to prepare, by their home comforts, (some probably such as I have before alluded to) for the strife again on the morrow. We retired to rest without anything more than each a glass of water, and an orange we bought on our stroll, and rose in the morning with cool heads, and a good appetite for the luxurious display of turkey, pheasant, beef, ham, tea and rolls, &c., the Royal Hotel so amply provides, with clean rooms, and the most civil and attentiv waiters. After our meal we started on the business I had come about, which was to inspect some newly-invented machinery previous to purchasing. The streets now were all alive with the busy crowd, like ants, going in all directions,—here a number of unemployed operatives, with starvation in their faces, their wages having ceased, and in many cases, the means of providing food and going to the nightly gin shop being exhausted, they now feel the double deprivation of stimulants and bread too.

The great commercial crisis being at its height, the Exchange, which we now entered, was crowded with the most gloomy and anxious number of faces I ever saw congregated together. A merchant there said many that morning trembled to open their letters, lest they should find in them information that their bills were dishonoured and themselves bankrupts. "Why," I said to my friend, "should men sacrifice health and peace, and shorten life to make fortunes they seldom live to enjoy, and always at the expense of present enjoyment?" I wished that over the Exchange, and inside too, could be written, "For we brought nothing into this world, and it is certain we can carry nothing out. And having food and raiment, let us therewith be content. But they that will be rich fall into temptation, and a snare, and into many foolish and hurtful lusts, which drown men in destruction and perdition. For the love of money is the root of all evil; which while some coveted after, they have erred from the faith, and pierced themselves through with many sorrows."—1 Tim., vi., 7-10.

We visited factories and machine shops, all full of bustle, dust, dirt, and anxious haggard occupants, then dined, and turned homewards out of the rolling noise of coaches, carts, omnibusses, and hearses (of which

there was a sprinkling) the smoke and the gas, to the railway station, and were soon amidst the grand and wild scenery of the Derbyshire hills above Glossop, through which the rail passes, and so on to home late; a cup of weak tea, bread and butter, and an egg, and to bed, to rise this morning early and again at business. Business, however, with a cool head, quiet nerves, and moderate desires, and an assurance that all things shall work together for good to them that love God, is very different in its effects upon the frame from what he had witnessed the day previously. "And why take ye thought for raiment? Consider the lilies of the field, how they grow; they toil not, neither do they spin: and yet I say unto you, That even Solomon in all his glory, was not arrayed like one of these. Wherefore, if God so clothe the grass of the field, which to-day is, and to-morrow is cast into the oven, shall not he much more clothe you, O ye of little faith." Matt. vi, 28-30.

**STOMACH COMPLAINTS.**—These proceed from a variety of causes, and great errors in treatment are often committed from want of a correct knowledge what has caused the stomach to be out of order; in a great number of cases the cause is in over-worked brain, the vis vita or electricity in the nutritive nerves is drawn from its proper office of causing the necessary chemical change in the chyme or dissolved food in the stomach, and consequent acidity takes place: this irritates the coats of the stomach and duodenum, it passes into the bowels where it is taken up into the blood, and this imperfect matter makes imperfect poor blood and bad tissue; and the imperfect blood circulating through the body and coming in contact with the delicate nervous system irritates and impoverishes the nerves by not affording healthy material for their support.

When persons' stomachs are "out of order," they commonly resort to drugs to restore them, which only give temporary relief, and increase the evil by forcing the stomach to act, to be followed by proportionate re-action: for example, when there is acidity, alkalis, soda, magnesia, &c., are resorted to to correct the acidity, which they will do so far as the then contents of the stomach is concerned, but as all alkalis lower the vis vita or electrical power of the nutritive nerves, the relief is only temporary, and the mischief more permanent, as is experienced the next time food is taken into the stomach. Thus chronic disease of the stomach and duodenum is often the result, and the individual cannot

live without a constant supply of soda, which after a time ceases to give relief, and a miserable prolongation of suffering, until death relieves the sufferer.

Whenever I have acidity, which I have sometimes from over-work, I never take any remedies except rest. I go on taking plain food without any stimulants or condiments, mustard, pepper, or pastry, and allowing the brain to repay the vitality it has overdrawn from the nutritive nerves by entire rest. Many persons are fidgetty and anxious if they perceive acidity in the stomach, they are never at rest about it, first taking one remedy, then another, now soda; then brandy or other stimulants, until they set up real chronic inflammation of the mucous membranes. I bear with acidity until it goes off by rest and diet, and if even of a few days continuance, no injury will result; the constant attempts at curing acidity by any other means than raising the power of life by natural means only increases the nervous irritation.

Tobacco and opium are very fruitful causes of stomach disease, lowering the vitality, causing acidity and flatulence, becoming also tyrannical habits, exceedingly difficult to shake off, until they have incapacitated the poor stomach and nerves for any further work. The mucous membrane lining the stomach is first affected and shown by the red and loaded tongue, then, of course, the inflammatory action is communicated to the nerves, and is shown by the white tongue. The brain having become implicated by sympathy. The mucous membrane lining the stomach being continuous with the duodenum and bowels, and passing up through the gall duct into the liver, and also to the pancreas, all sympathise with the part first affected in the stomach; this goes on increasing for a long time without great inconvenience if a person has a tolerably stout constitution, but some day an excessive dinner, or extra quantity of stimulants, or severe cold, sets fire to the train, and all the inflammatory action then concentrates on the weakest organs, be that the lungs, the liver, stomach or bowels. Bleeding, blistering, and calomel are immediately and actively employed to reduce the inflammation, and with it the power of life, and the vitality of the blood, is reduced often never to be replaced again. Fomentations, body pack, simple diet, and rest, would seldom, if ever, fail to accomplish a cure, and leave the patient uninjured.

When a person's tongue is unnaturally red, cracked, and fiery,

there is great danger to life, ready to be developed,—taken at once by rest and simple treatment the cause may be removed without danger; but in all cases where this state of tongue has been allowed to come on, it is not treatment of weeks, but months, that will be required to cure. A loaded furred tongue shows the impurity of the blood, the offensive matter having come from the lungs, and not from the stomach; and when the tongue is habitually loaded there only wants a little exciting cause, in the shape of bad cold or excess, to bring on typhus fever; and the giving of purgative medicines when the tongue is not clear aggravates the mischief tenfold. Stimulating the skin by hot and cold dripping sheets, short vapour baths, followed by cold shallow or cold dripping sheets or wet packs; drinking cold water by sips, five or six or more tumblers per day; avoiding stimulants, tea, and mostly flesh-meat; regulating the amount of water treatment by the strength of the patient, and giving nature time to act, for if this is not done great mischief may accrue by over stimulating the skin and whole frame by too much water application in a day. It must be borne in mind that if the frame is over donched with water in any form it may be injuriously reduced in power by too great exudation from the skin.

I give the high authority of Dr. Gully on the subject of the state of the tongue as symptomatic of various states of disorder in this organ; see further on—article, Mucous Membrane.

I have recently had the case of a staff-officer, age about forty-five; when he came to me his blood-shot eyes, depressed brow, and the suffering expression of his countenance shewed that there was great mischief somewhere. He had had advice, and the numbness in his head and impaired sight was pronounced congestion of the brain. There was, of course, congestion from the nerves of the stomach, sympathising with the brain, and their lowered organic vitality caused the muscular action of the blood vessels in the brain to want the full power to propel the blood forward, and so caused fulness and all the distressing symptoms which drugs had only aggravated; and he was quite incredulous that our simple treatment and rest would restore him to health. Nevertheless, he became quite well. The stomach had long been punished with alcohol and tobacco, but being naturally robust, nature had long borne those outrages on her laws which would have destroyed a more delicate constitution. I gave at first only tepid dripping sheets,



hot soaping, followed by tepid wash, very gentle fomentation to the stomach half an hour, followed by a rub down with towel partially wrung out of cold water, sitz 85 deg. ten minutes, feet in hot mustard and water, body bandage night and day, at first spongio, as he could not warm a calico one. As soon as his system got a little more vitality he wore calico body bandage night and day, and spinal compress, slept in wet socks, head bath for fifteen minutes once a day, followed by a tepid foot bath. After a time five minutes steamer, followed by cold sheet and sitz 70 deg. eight minutes, wet body pack, then whole wet pack, the legs, from knees downwards, in dry blanket, and hot can over blanket; finally, cold dripping sheets and douche. Diet at first, little lean cold mutton chopped fine and mixed with bread crumbs and spoonful of gravy, with rice pudding without egg, for dinner; breakfast, very weak black tea with light boiled egg, or water instead of tea is generally best; evening meal same, nothing after 7 P.M. When the stomach is low in power it must have rest, and very little food until there is vitality to digest it, otherwise it is only putting more acid matter into the blood. In cases of chronic disease of the pylorus or duodenum in the pit of the stomach, there is little power to stand much water treatment, still the hydropathic system, I believe, is the only chance of cure; here dry hand-rubbing over the stomach by a healthy strong person is of great use; gentle fomentation over the stomach, and if very irritable and painful, a wet stomach pack, with towel wrung out of 65 deg. kept on for an hour at a time, and then wipe dry with partly wrung-out towel, giving soaping all over, tepid wash down once a day, and 90 deg. sitz; gentle dry foment over the stomach with fomenting can for half an hour at a time is good, and wipe with wrung out towel after.

The great variety of causes of stomach disease make it impossible to lay down anything more than a general principle of treatment. It must always be borne in mind that in these cases there is a depressed vitality of the whole frame, as the great plexus of nutritive nerves at the pit of the stomach (and which are the primary source of digestive power,) are in contact with the inflammatory mucous membrane. The body must be nursed into vitality by the most attentive means, and in accordance with its delicate structure. All art can do is to be a nurse, and a very unassuming one, watching symptoms and paying regard to the minutiae of nature's indications. If we are to be in health, we must obey the



laws God has laid down as conditions of health ; eating to live, and not living to eat ; keeping the body, with its often unreasonable cravings, in subjection. Keep the surface of the body also clean, and cleansed from the great daily exudation of waste matter, which, if suffered to remain, is again taken up by the absorbents, poisoning the blood, and throwing double work on the other organs of excretion—the lungs, liver, bowels, and kidneys.

**FLATULENCY.**—This troublesome ailment is often an excuse for taking matter into the stomach that causes all sorts of mischief. People take brandy for flatulence,—they smoke tobacco for flatulence, and some refine upon this and get nice stimulating mixtures for it. Now all these things only tenfold aggravate the causes which produce it. Flatulence proceeds firstly from weakness in the nutritive nerves, causing acidity and then fermentation ; gas of course is generated in the stomach and bowels. Strong healthy persons have no flatulence. Those who have, let them bear it patiently, until by proper diet, rest, and abstinence from green vegetables, stimulants, &c., &c., the stomach performs its office more vigorously ; flatulence will then disappear, and in no other way will it be cured.

**LIVER COMPLAINTS** are commonly shown by the yellowness of the complexion, and what is ordinarily termed biliousness ; sickness, nausea, furred tongue, headache and disagreeable taste in the mouth, lowness of spirits, amounting sometimes to mania, from the vitiated bile circulating in the blood, and so coming in contact with the sensitive nerves in the brain. For the anatomy and functions of the liver, see engraving and article further on. As liver complaints arise from various causes, I can only, in this limited work, give some general advice. Budd, on the Liver, and Gully on the Water Cure, give more particulars than I can have space for in this work. The most ordinary symptoms of disordered functionary action of the liver, is, as I state above, the bile, from want of electrical power in the organic nerves, arising from over fatigue or improper food, is not taken out of the blood, but goes on circulating in it, sickening every part of the body it comes in contact with, until the blood is so impregnated that jaundice is produced. What bile does pass into the duodenum, or small stomach, is so acrid that the delicate sensitive nerves in the mucous membrane

cannot bear the presence of it, and immediately expel it, either upwards, by vomiting, or downwards, through the bowels, causing diarrhoea. First, it is necessary to be careful nothing is taken into the stomach to cause increased irritation, and as the stomach, duodenum, and bowels, when there is obstructed action of the liver, more or less sympathize, little food, and that of a very simple kind, is best until these have recovered their tone; no stimulants, coffee, and the less flesh meat the better, and if any a little cold lean meat cut fine, no milk; bread and water, and farinaceous puddings without egg, no green vegetables, but little mealy potatoe. Fomentations to the stomach and bowels, with the flannel pads and can, afterwards wash down, or cold dripping sheet, and put on wet body bandage. Whenever, from over-fatigue, I become bilious, I find wet packs soon restore me; generally one is sufficient, or every day for two or three days if much out of order. When there is chronic liver disease, then the liver pack, as described in this, is very useful. The wet body bandage, worn night and day, is very beneficial; sitting baths, 70 deg. or cold, fifteen minutes, and occasionally feet in hot mustard and water. Sometimes persons who have been in hot climates, and have there lived irregularly, suffer afterwards from atrophy, or waste of the liver, this is never cured, but life may be prolonged by care and the use of gentle hydropathic remedies. Such cases are often free from bilious vomiting, or nausea, and have fair appetite, but they cannot get nourishment from the food they take, and the countenance is pallid, the blood wanting the red corpuscles of healthy persons. Little can be done for such cases, as any strong measures, either in allopathic or hydropathic treatment, will only shorten their lives and add suffering: care in food, rest, and slight applications of water to the surface of the body, according to the lowered vital power, is all that can be done. If there is continued sickness in these attacks, use the stomach pack, as at page 54, and rest in bed. The ordinary way of getting over liver attacks, by calomel, is shown strikingly in Gully, as destructive to life. Mustard plaisters may be freely used over the liver and stomach in bilious attacks; being a vegetable substance no injury can arise, as is the case with blisters of mercurial ointment. From being constitutionally bilious, and having suffered from it for twenty years, I now scarcely ever know what it is, except from over-fatigue, and then a little rest soon sets me

right. I can take a greater variety of food than formerly, with comfort, and I attribute this to entire abstinence from all alcoholic drinks, and the daily use of hydropathic applications, as dripping sheets, sitz, &c. The most painful and distressing affection of the liver is the formation of gall stones, from the liver forming impure bile, which becomes hardened in the gall bladder; these gall stones are sometimes of considerable size, and are forced through the small tube called the gall duct, sometimes rupturing it, and of course causing death. But gall stones as large as a horse bean are often passed, and the patient only suffers the intense pain, and often after is scarcely conscious when they pass, from the duct being enlarged: hot fomentations and hot shallows and wet body packs are what we recommend when the paroxysm is on.

**DISEASES OF THE KIDNEYS.**—The space I have here will not permit me to go into the intricacies of this subject; I can only make some general observations upon the irregularities and diseases of these organs. Dr. Johnson's work on the subject gives the best and most extensive information.

I give in this work an engraving of the blood vessels and absorbents in the kidneys, with a description of their nature and offices, and it will be seen how delicate and wonderful the action of the malpighian tubes are; for through these knots of blood vessels the uriniferous tubes which cover them draw out, by their electrical power of attraction, the urine out of the blood. How this is accomplished, physiologists have been unable to discover, for there are no perforations nor any appearances of outlet; they can only tell that the act of abstracting the urine from the blood is there performed, and carried into the bladder. Other impurities are drawn away out of the blood at the same time. Comparatively little attention is paid to the state of the kidneys in doing their work healthily. All attention is often absorbed by the bowels when it is as necessary to health that these organs should take out the waste matter out of the blood, as the bowels do the feces. The delicate structure of the kidneys points out at once how necessary it is to live in the plain manner it was designed we should do, for all the ale and porter, and the wine and the spirits, and the hot condiments, and the infinite variety of the cook's inventions, enter the blood, and have to pass these purifiers as well as the liver, &c.

The quantity of alcoholic drinks many use, wear these fine knots of

vessels out, or cause inflammation, and the consequence is, in thousands of cases, destruction. The uriniferous tubes, in disease, draw out with the urine, serum, and the life of the blood, bringing on diabetes, which so rapidly reduces the body. I am often told persons have the gravel, and that there is a gravelly sediment in their urine: this is a mistake; it is only the excess of impurity in the blood from the liver not taking its proper share of the work of purification, and when the liver is put right, the sediment disappears.

When there is pain in the small of the back, where the kidneys are situated, or uncomfortable feeling, with restriction of urine, and high coloured, I find the best remedy is the use of the hot fomenting pads for half an hour; one on the back, another on the front of the body, with hot can underneath that on the back, and one on the front. This is beneficially stimulating to the liver and stomach, as well as the kidneys. After the fomentation, have the trunk wiped over with a towel partly wrung out of cold water, or a tepid dripping sheet in winter, or cold one in summer, and put on the wet body bandage, re-wetting it every two or three hours.

A hot sitting bath, fifteen minutes, 100 to 105 deg., then wash as before, and put on wet body bandage, wearing it day and night, or day only; if it does not keep warm put flannel over, for if not warm it will do no good, but harm. Sipping six or eight tumblers of cold water per day is excellent for cleansing the blood. Wet body pack one hour, followed by tepid or cold sheet, or wash, will be of great service if the other baths named do not give relief soon. Absolute abstinence from all stimulating drinks, pepper, mustard, and pastry, and abstinence from flesh meat for a few days is necessary to relief. It must be borne in mind that if the skin and the liver do not take their proper share in throwing off impure matter from the blood and the whole body, the kidneys have extra work thrown upon them, and so if the kidneys do not act well, the liver and skin have more to do. And so by the skin, if that is not kept in good condition, and its pores free, the matter that should pass through it is thrown on the liver, the lungs, and the kidneys. Nature uses any outlet to relieve itself of impurities, and this can be done without injury if not continued too long.

The wonderful beneficial effect of the dripping sheet in stimulating circulation, and keeping the outlets open in the millions of pores in the



skin for the easy expulsion of the two or three pounds of waste carried off by them every twenty-four hours, and the free access of air to the absorbents, cannot be overrated. Let persons who have any restriction in the action of the kidneys try the effect of our applications to the skin, and the sitz baths, and the body bandages, and I am sure they will find relief, and without possibility of harm.

DIABETES is a disease that is rarely if ever cured by medicine, and the cause is, that instead of quieting the inflammatory action going on in the kidneys, (and especially in the malphigian tubes), ale, porter, and wine, and flesh meat, are ordered in profusion, cutting the very ground from under the poor patient by adding fuel to the fire—adding inflammatory matter under the idea that all these “good things” are necessary to keep up the strength of the patient, but which consumes the structure with double speed, more than if it was left without any help. The cause of the inflammatory action is in the blood, which by the use of stimulants and improper diet has become diseased, and its chemical properties deranged, and so carries disease into the kidneys and the delicate structure of the malphigian tubes.—We first use strict diet, abstinence from all stimulants, &c., as I have stated in affection of the kidneys, no flesh meat, gentle fomentation, sitz bath 80 degrees, for the system is soon so lowered, that even dripping sheets and sitz at 80 degrees are too cold. For these cases we give them at 90, until they can be borne with comfort lower. There is the lowest vitality to deal with, and excessive or strong water treatment would inevitably do mischief.

DISEASES OF THE BOWELS.—I have, in the description of the different baths, given some general directions as to the remedies we use in what are commonly termed bowel complaints. The bowels are liable to various and serious diseases; the most serious, and which often proves fatal unless taken in the early stage, is, inflammation of the mucous membrane lining, and its consequent destruction, when it passes off in the form of slimy mucous, and occasionally streaked with blood. When the bowels are habitually relaxed there is weakness in the nervous power, and consequent danger of disease being easily, and by trifling causes, taking place. Such cases would find great and permanent benefit from the frequent use of the sitz bath,—cold if in

tolerable good health, or 70 deg. if not so, and twice a day spinal rubbing while in the sitz will be of much benefit, and rubbing the bowels while in the bath. Some with relaxed bowels cannot wear the body bandage, but when they can do so without causing irritation of the bowels, they will find much benefit from using it a few days at a time.

The general treatment we pursue in cases of chronic inflammation of the bowels and discharge of mucous is, to use very gentle treatment with a view of soothing the whole frame, and avoiding any strong re-action by cold applications. First a very gentle fomentation for twenty to thirty minutes, followed by a sitz bath, 80 or 85 degrees, for five minutes, rubbing the bowels with the hand gently, and if 80 or 85 deg. feels too cold, have the bath 90 deg. Besides this, have tepid wash down or tepid sheet on rising and at noon; the sitz at evening should be for fifteen minutes and no rubbing, feet in hot flannels at the same time: avoid all stimulants and flesh meat while there is any discharge of slimy mucous, and avoid much exercise or mental excitement. Opiates are given largely for this disease; they of course only allay the pain and forcibly stop the discharge, to some extent; but as opiates are entirely foreign to nutrition the relief is only temporary, and the re-action greater. A late workman of mine, who brought on this disease (as hundreds do) by the use of tobacco: his fine fully developed frame and naturally robust constitution had long withstood the deadening effects of this baneful narcotic, but he had to pay for the gratification of his appetite with many months of misery, and the shortening of his existence by probably twenty years. For the treatment of hopeless cases of this disease to the period of death, see index, "Death from Ulceration of Bowels."

Worms cause disease in the bowels, and great irritation, and are a cause of complaints being exhibited in other parts of the frame that appear to the casual observer to have no connexion with the bowels. Epileptic fits, sickness and nausea, irritation at the seat, and general disturbance of the nervous system, and excessive craving for food, and griping pains, are not unfrequently caused by worms in the intestines. Our remedies are general tonic treatment, and the use of the body bandage, drinking half a pint of cold water on an empty stomach four

times a day. Worms are, however, difficult to eradicate. Inflammation of the bowels I treat of under the head "Theory and Cause of Inflammation," and ordinary bowel complaint and constipation, at page 98.

The habitual use of purgatives, however small the quantity, will eventually produce disease. The idea many have of the necessity of keeping the bowels "open" often destroys the mucous membrane lining, and the bowels will never act naturally so long as aperients are used. No harm can arise from several days', or even a week's inaction of the bowels. Stimulants and tobacco, by injuring the nervous power of the bowels, greatly tend to irregularity and disease.

**SORE THROAT.**—For sore throat, or ulcerated sore throat, wring a napkin out of cold water, double it into four, lengthways, wrap it round the throat, and a good quantity of flannel over it, to produce heat; if a good heat is not produced it will do harm. If there is much inflammation in the throat, renew the wet cloth every quarter of an hour; this persevered in night and day will rarely, if ever, fail to stop quinsy, and cure bad cases of ulceration, but as sore throat is only a secondary symptom, care in diet, &c., is absolutely necessary; while the throat is affected, flesh meat and all stimulants must be abstained from, and sip four or five tumblers of cold water per day, by table spoonfuls at once, during the time the affection continues. If the napkin and flannel is objected to in the day time, use a piece of wetted spongio piline, and a woollen scarf. Many lives would be saved by the use of this simple application. For simple sore throat from cold, I find packing the neck during the night, and washing it in cold water next morning, shortly and invariably restores. The prompt application of this plan would save many from bronchitis and consumption. Mustard plaister may be used to the throat with advantage and safety, having the legs up to the calves in mustard and water, 105 deg. fifteen minutes.

**CATARRH, OR NOSE COLD.**—Wet pack the forehead, then put some cold water into a basin, or mug, and put the nose into it and commence snuffing up the water, and do so for three or four minutes, then wait awhile, and repeat this several times a day according to the severity of the attack. Keep the whole head well packed all night.

This plan will also stop nose bleeding, with the addition of keeping a cold cloth at the nape of the neck.

**TYPHUS FEVER** is of altogether a different kind from scarlet fever, as it is owing to the bad impure state of the blood, and may be brought on at any time by bad diet, and the inaction of the purifiers,—the skin, liver, and kidneys. It commences by giddiness, prostration of strength, drowsiness, moist flabby tongue, with fetid breath, small and rapid pulse, intense heat, but not on the skin. Begin with wet pack, spread the macintosh sheet on mattress, then two blankets, then a cotton or linen sheet wrung out of tepid water. A fomenting pad, (see page 46) wrung out of hot water, is laid under the back and shoulders, then another on the front of the body; wrap in the wet sheet entirely, including the legs and feet, then put one wrap of blanket over, then the fomenting can filled with hot water, then the other side of the blanket brought over, and tucked well in; next the macintosh sheet, and a bed on that. Put a small wrung out wet napkin in the arm pits before covering up. To remain in this pack half an hour, then to be taken out and have a tepid dripping sheet, or shallow at 70 deg., or tepid sponge over, and then well dried with a dry sheet, not exposing the body to the cold; when this is done, wrap the body in dry blankets while another pack is prepared, and repeat the same operation as before with the same after treatment. Dress after the two packs and recline on a sofa. Repeat these two packs every six hours, night and day, until the fever is subdued, gradually abating the number as the fever lessens. It is to be borne in mind that this fever very greatly reduces the strength; the blood and tissue is poisoned with impure matter, which unless drawn out, soon becomes putrid, and of course destroys life. If the bowels do not act with the pack and hot pads, use an enema of warm soap and water. Wear the wet body bandage night and day, changing every two hours, if it is not too much fatigue; but it is essential to renew and wash the wet bandage, as it will draw out much morbid matter; the sheets and blankets should be well washed also, and aired often.

The great object must be to raise the vitality in the nutritive nerves, and especially at the pit of the stomach, for these are the key of the vital powers of the viscera, and if they can be healthily stimulated they



will soon work off disease by making good material for the blood. The arms and legs should also be constantly packed when out of the above pack; this is done by strips of calico wrung out of tepid water, wrapping round the limbs, and then macintosh and flannel over, as described at page 45; renew these packings with the body bandage, having a fresh body bandage and fresh packings, that one set may be thoroughly cleansed of the fetid matter—not washing the limbs when changing, as it would tire the patient too much.

These packs to the whole frame, and especially the fomenting pads, will stimulate the skin, the liver, and the kidneys, to act in purifying the blood, and as soon as these organs can be got to work, nature will cure itself.

Cold applications in fevers, on reflection, will be seen to be injurious.—the system is deranged, the nervous vitality has lost its command over the functionary action, and any shocks by cold application causes reaction, which is only further drawing on their strength.

If the head is much affected, as it often is, a good sized mustard poultice to the nape of the neck and top of the spine will be useful. Wipe it off dry, and renew it so as to keep up the redness. The throat packed constantly, and rewetted and changed with the other bandages. Continue this treatment until the fever is subdued, when great weakness will follow; then sponge the body over whenever the skin is hot and uncomfortable, not oftener, as we do not want to draw upon the strength or over fatigue. In this stage the water may be 65 to 70 deg. and the hands and arms and feet in cold water, or wiped with cold wet cloths frequently. During the height of the fever, the cooling drink as receipt in this book should be taken freely, with alternate sipping cold water. If the cooling drink causes any griping of the bowels, use water only. Drink whenever thirsty, as the water will be of great use in purifying the blood.

As to diet, during the height of the fever, the less food the better, and only of a liquid nature, as arrowroot, sago, or gruel, no bread nor flesh meat, nor any solids. When the debility comes on from the fever abating, shewn by the pulse, &c. then give frequent spoonfuls of arrowroot or sago, with a desert spoonful of brandy to the pint. Arrowroot with boiling water poured over, is better than boiling it, as it has a more astringent property. As the patient becomes stronger and has

a more natural desire for food, some beef tea and dry toast may be given, and so gradually go on increasing the diet, to some finely cut up lean meat, with bread crumbs and a spoonful of beef tea over, but dry is best. No ale, wine, or spirits, but the usual diet as recommended in the early part of this book. Ale, wine, porter, or any rich food or condiments, will very likely derange the action of the liver, &c. and consequently the blood. The system must be nursed up with plain cool diet, fresh air and good water, and rest. Patients very soon rally by the use of these natural means of helping the diseased body to restore its primitive condition, and it must be obvious how much is gained by the system not having a quantity of drugs to throw off, besides the morbid matter, and the advantage of not punishing the stomach and bowels with what is so foreign and disagreeable to them, that they expel the stuff soon as they have power to do so, — but they do not come off harmless in the operation.

**SCARLET FEVER.**—This formidable complaint is readily subdued by the following plans: we have never lost a case out of a great number. When the usual symptoms commence, which are sore throat, and nausea, inflamed eyes, and general chilliness, followed by heat and red patches on the face and arms. Commence wet pack night and morning, as at page 43, and also middle of the day if fever rises, followed by tepid dripping sheet. Throat constantly packed as at page 59, renewed every hour, rubbing the throat at the same time with cold water and the hand, wearing the wet body bandage night and day, in the first stages of the complaint; continue this course till the whole body is covered with the scarlet appearance; then all that is required is to guard from cold, lest the scarlet appearance should be driven in again. Sponge with water 80 or 90 degrees, dripping sheet night and morning, keeping the wet body bandage on in night only. Great care must be taken to avoid exposing the body to the air, while having the baths: bear in mind also that the application of cold water will do mischief, and probably drive in the scarlet rash, which must be kept out on the skin until the fever is subdued, when it will disappear.

If, as I have stated before, the wet pack is used at once, and persevered in on the symptoms appearing, and until the rash is out, much time will be saved. The patient should sip cold water freely, say four or five tumblers per day, and also in the night. The wet body bandage should

be re-wetted every three hours. Very little food, no wine nor any other stimulants, no flesh meat, coffee, &c. Soon as the rash goes in after the above processes, the skin will become rough and come away in scales. If there is no fever in this stage, do not take any treatment, for if the skin is rubbed off it will retard the formation of the new skin. If any feverishness is left sponge carefully with 85 deg. water. Seven days is usually sufficient to get over this complaint.

SCARLATINA is only a milder form of the complaint, and may be treated in a similar manner.

If in children, use napkins for packing. Scarlet fever is an acute inflammation of the cutaneous and mucous portions of the skin, accompanied with a very infectious fever. It is of the same nature as measles, and other eruptive fevers, and cannot be subdued in a day or two, but must run its course, at least seven days. The superiority of the Hydro-pathic treatment in these complaints is very striking; numbers have ailments left in their constitutions for the rest of their lives by the drug system, and in some the constitution is ruined.

SMALL POX AND COW POX being eruptive fevers of a precisely similar kind, we treat them exactly the same as above.

APOPLEXY.—This is a formidable and often fatal disease, to which all who indulge in intoxicating liquors, high feeding, and indolent habits, are liable. The doctor frequently wards off the blow for a time where he is at hand to apply to, by administering his purgatives and leeches, but which nevertheless ultimately shorten life; and unless such subjects give up all stimulants, and live plain and take proper exercise, the result will, eventually, be ruinous to the frame. I have personally known not a few who have passed into eternity by this disease, who had warning after warning, which, if attended to, would have saved their lives. But no, they trusted to the doctor's skill and to his nostrums to enable them to live in defiance of nature's laws;—very like an aged relative of mine, who, when the railway from Manchester to Liverpool was opened, reduced his rates of carriage, believing the rails would soon be worn out and people afraid to trust themselves or their goods upon its flying machines. As the luggage vans beat his boats off the canals, so the fundamental laws of nature will beat the attempts to controvert them. The bleeding and physic makes sure

work with the body sooner or later, according to the speed the patient lives; but the body has no better chance of success than the boat with the rail. The burden of all my subjects in this little work must be, again and again, "Sow not to the flesh," for if we do, we shall most assuredly reap corruption, and may be, everlasting ruin and misery. Christmas is coming, and what with anxious cares and Christmas living, numbers will be led to the slaughter, and for what? For but a few hours' sensual gratification, which can only leave regret behind. The subject is of such importance to many now preparing themselves for this disease, that I think it best first to give the following quotation from one of the standard authorities, showing the nature, prevalence, causes, and effects of apoplexy, and then to add remarks from my own experience of not a few cases which have come under my observation during the last seven years. Dr. Hooper, in his celebrated work, "Lexicon Medicum, or Medical Dictionary," says, "Apoplexy, from the Greek, '*I strike or astound*;' so called from the sudden and violent invasion of the disease. A sudden abolition, or great diminution of the powers of sense and voluntary motion, the patient lying in a sleep-like state; the action of the heart continuing, as well as the respiration, which is often accompanied with a stertorous sound. The fit of apoplexy is frequently attended with convulsions of one side of the body and paralysis of the other. The disease has also been called *Morbus attonitus*; *Attonitus stupor*; *Sideratio*.

"The more prominent symptoms of apoplexy being analogous to those which indicate compression of the brain, the disease was, till lately, naturally enough referred by pathologists to effusion of blood or serum within the cranium. Thence the distinction of apoplexy into *sanguineous* and *serous*: the former was supposed to arise from an overflow of blood propelled with impetuosity by the arteries of a robust and plethoric system; and the latter from a thin and dilute state of the blood, with relaxation of the mouths of the vessels, causing serous effusion. This distinction has pervaded the writings of modern pathologists from the time of Morgagni downwards. It is true that apoplexy occurs under two forms corresponding with those called *sanguineous* and *serous*; the first being characterized by a hard full pulse, flushed countenance, and stertorous breathing; the second by a feeble pulse and pale countenance: but the notion that one of these forms is essentially



connected with sanguineous effusion, and the other with serous, must be entirely relinquished, for it is now well ascertained that either variety of the disease may be accompanied with effusion of blood or of serum, and that either variety may occur without any effusion at all. This being perfectly understood, we may nevertheless admit the validity of the old distinction, as far as the nosography of the disease is concerned, and consider the majority of apoplectic cases as referrible to one of two classes, which, in order to avoid hypothesis, we may call *sthenic* and *asthenic*, instead of *sanguineous* and *serous*; the real difference between them residing not in the pathological cause, but in the state of the system on which it operates.

“1. In the sthenic form, the fit is generally sudden and without warning; though it is occasionally preceded by a dull pain in the head, accompanied with a sense of weight, somnolency, and vertigo. The inspirations are deeper than natural; the face is red, and the eyes bloodshot; and there is not unfrequently hæmorrhage from the nose. On the accession of the paroxysm, the patient falls to the ground, and lies as in a heavy sleep, from which he cannot be roused. The breathing is remarkably oppressed: though at first slow and regular, it becomes more frequent, feeble, and irregular, with the progress of the fit, till at length, in many cases, it is intermitting and spasmodic.

“In this form of the disease, stertorous breathing almost invariably occurs, arising from an accumulation of mucus in the trachea and larynx, which impedes the passage of the air in respiration.

“There is often, also, an accumulation of frothy saliva, which, as it becomes troublesome by its increase, is occasionally blown away from the lips with considerable force.

“The skin is nearly at its ordinary temperature, and covered with a copious perspiration; the pulse is full and hard; the face flushed; the eyes bloodshot and prominent, and generally closed. The cornea is dull and glassy, and the pupil for the most part dilated. In a few cases, however, there is a tendency to spastic action, sometimes extending to the limbs, but more generally confined to the muscles of the head and face, so that the teeth are firmly clenched, and deglutition is impeded; and where this state exists, the pupil, instead of being dilated, is strongly contracted. This contraction of the pupil is a symptom indicative of extreme danger. Dr. Cooke remarks, that although all

writers on apoplexy mention the dilated pupil, the contracted pupil has been noticed only by Aretæus among the ancients, and Dr. Cheyne among the moderns. Dr. Cooke states, that he never knew a person recover from apoplexy who had the pupil greatly contracted, and that the experience of Sir Gilbert Blanc and Dr. Temple agrees in this particular with his own. The remark has been fully justified by subsequent observation. The paroxysm of apoplexy varies in duration from eight to eight-and-forty hours, or longer. Forestus relates the case of a woman, who lay in a fit of strong apoplexy for three days, and yet recovered.

“The asthenic form of apoplexy rarely makes its attack so unexpectedly as the other, and is usually preceded by some precursory symptoms, as headache, vertigo, imaginary sounds, faltering speech, failure of the memory, or some other mental faculty, and at length a sense of drowsiness, and a tendency to clonic spasms. On the attack of the paroxysm, the patient is as completely prostrated as in the sthenic variety. The countenance, instead of being flushed, is here pale or sallow, but at the same time full and bloated; the pulse is weak and compressible, and the breathing, though always heavy and laborious, is not always stertorous. If spasms occur, they are generally of a clonic kind. The duration of the fit varies as in the preceding variety; and if the patient recover, he is more liable to a relapse, and more in danger of hemiplegia, or some other form of paralysis, than in the stronger modification of the disease. There does not appear to be the smallest reason to believe that this variety of apoplexy is more frequently connected with effusion of serum than the former. The difference between the two seems to reside principally in the greater vigour of the system in the one instance than the other; and where effusion of blood is found, as it generally is, in the asthenic form, the vessels seem to have been ruptured, not from habitual distension, but from accidental, and often slight causes, that have produced a sudden excitement and determination of blood to the head, which the parietes of the vessels were unable to sustain: hence, a violent fit of coughing or vomiting, a sudden fright or fit of joy, immoderate laughter, the jar occasioned by a stumble in walking, or a jolt in riding, have been known to induce this form of apoplexy.

“The foregoing distribution of apoplectic cases under two varieties,

must be adopted only in a very general way, for there are many cases of an intermediate character, to which neither of the descriptions just given would accurately apply. A patient who has once suffered from apoplexy is extremely liable to a return of the disease. When the fit of apoplexy is not fatal, the patient sometimes recovers entirely and speedily, and a few days after is as well as if nothing had happened: at other times, some paralytic affection remains, most frequently hemiplegia,\* which is permanent or otherwise, according to the degree of injury sustained by the brain, the constitutional powers of the patient, and other circumstances. Apoplexy is a disease of advanced, rather than of early life, although it may occur at any age, even in infancy.

"Morgagni states, that of thirty apoplectic patients who came under his observation, seventeen were above the age of sixty, and only five below that of forty.

"Apoplexy, in one or other of its forms, seems to be at least as common among the poor as the rich. Sir Gilbert Blane, indeed, has observed, from tables derived from ten years' practice in St. Thomas's Hospital, and his private consultations, that apoplexies and palsies bear a larger proportion to other diseases among the lower than the higher classes. The affection, therefore, which has been called *serous apoplexy*, appears to be merely *simply apoplexy*, terminating in effusion.

"On the whole it appears to be sufficiently proved that apoplexy may occur independently of effusion or any other marked lesion of the brain; at the same time the great frequency of sanguineous effusion in this disease leads us to refer many of its prominent symptoms to compression in the greater number of cases; especially as such symptoms are precisely those which are well known to result from compression of the the brain arising from injuries of the head or other causes. There are no symptoms *uniformly* indicative of compression of the brain, whether resulting from disease or injury, and there are probably few practitioners who could not testify to the truth of this position from their own experience; nevertheless, when a patient dies in a state of profound coma, with immovable pupils and stertorous respiration, we expect to find on dissection that there has been some cause of compression; and the fact that these symptoms are occasionally met with where

\* Hemiplegia, from the Greek, half, and, I strike: so called because one side of the body is affected.—Dr. HOOPER,

there is no compression, does not prevent us from regarding them as the ordinary characteristics of that state of the brain.

"The blood effused in apoplexy is found in some instances to have issued from a number of small arterics, and in others to have proceeded from the rupture of a single one of greater magnitude; hæmorrhage may also be venous; and a case is related by Dr. Douglas, in which the left lateral sinus was ruptured. The quantity of extravasated blood has been found to vary from a few drops to five or six ounces. Morgagni states that the most frequent seat of the sanguineous effusion is the corpus striatum, and the statement has been confirmed by the observations of M. Rouchoux and other modern pathologists. Such effusions do not seem to be more frequent on one side of the brain than the other, through Morgagni thought that they were most common on the right. Of forty-one cases examined by M. Rouchoux, eighteen presented extravasation in the left hemisphere, seventeen in the right, and six in both,—a striking series of cases, it may be remarked, in favour of the opinion that there is usually extravasation *somewhere*.

"While the observations of Dr. Abercrombie render it probable that effusion of serum cannot often be a cause of apoplexy, it would be premature to deny absolutely that it is ever so; for, as Dr. Mason Good has justly observed, 'it is possible for effused serum to become occasionally a cause of that which, from its symptoms, is ordinarily denominated sanguineous apoplexy; for it is possible for the exhalants of the brain to participate so largely in the high vascular excitement by which this form of the disease is characterized, as to secrete an undue proportion of fluid into any of its cavities, and thus become as direct a cause of apoplexy as extravasated blood.'

Although these high authorities announce their opinion that apoplexy is caused by an unnatural congestion of blood in the brain, the blood vessels being unable to propel their contents easily and perfectly into the general circulation, and this of course implies weakness in the nervous power of those arteries, yet the old fashioned plan is recommended by Hooper and other famous practitioners whom he quotes. Dr. Hooper says,

"The predisposing causes of apoplexy are in general such as impair the energy of the brain, or occasion too great a determination of blood to the head, or impede the return of blood from the head. Plethoric,



corpulent persons, with a short thick neck, are very liable to apoplexy. Excess in drinking is one of the most frequent predisposing causes."

After he has stated that the predisposing causes of apoplexy are in general such as impair the energy of the brain, and cause determination of blood to the head, he goes on to describe his remedies, which are precisely what ordinary observers would think likely to aggravate the symptoms, by lowering the vital energy, as he proposes in the following quotation from his Medical Lexicon, and which is the standard and only authorised system recognised by the college of physicians. The doctor says,

"In the treatment of apoplexy, if we be consulted during the existence of the precursory symptoms which have been noticed as frequently taking place, we shall often be able to ward off a paroxysm by bleeding, purgatives, perfect quiet, and, in the sthenic variety, a reducing regimen. Where, however, the state of the pulse, and other symptoms, give proof of weak vascular action and nervous debility, depletion should be practised with caution; and purgatives will often be found preferable to blood-letting. Yet, whatever be the degrees of debility, if there be drowsiness, vertigo, and a dull pain in the head, we must have recourse to bleeding, either local or general; for such symptoms will assuredly lead to a fit, unless timely subdued."—Hooper, page 155.

Now from his language he is evidently afraid that the weak vascular action and nervous debility may not bear bleeding, so he recommends scouring the poor bowels, and forcing their delicate absorbents to take up his aloes and calomel, and carry such stuff into the circulation, instead of some natural ailment. Bleeding and purgatives to prevent a disease, which the faculty says comes on from want of vital power in the vessels to propel their contents easily and freely! Surely it is to be hoped they will discover some method of prevention and cure more in harmony with their own description of what the body wants, to avert these calamities. Bleeding and purgatives never did give nutrition nor vital power, but they can lower and extinguish it.

They do not assert that there is too much blood in the body, but that it is determined in the excess to certain weak vessels. Now, instead of drawing blood from those weak vessels, which must necessarily, as the circulation goes on, be surcharged again, soon as the stomach can manufacture more, and thereby leave the *cause* in action, we endeavour

to divert this excess of blood to other parts of the body, and to ensure a continued determination to those other organs until, by more natural living, the whole circulation is regulated, and the vessels in the brain have had time for recovery. These vessels have long previous to the attack had an unnatural pressure upon them, either from a lowered vitality, by improper food and liquids, or by want of exercising the frame, or an indulgence in bad propensities, which has prevented free circulation.

Lowering the vitality, or the electricity in the nutritive nerves, by which alone every artery or vein propels its contents forward, must, on the slightest reflection, independent of prejudice, appear the most unlikely treatment to succeed in restoring. Nature's laws have been outraged by the subject of the seizure, and it is only by acting on this consideration, and returning to the strictest course of living those laws demand, that any material or permanent restoration, which is so highly necessary in the brain, can on sound principle be expected, for the blood vessels here have no capabilities of extension as in other parts of the body, where they may be distended to a great extent without danger to life.

The least pressure in the brain is felt, and if any of the minute and delicate veins are from this pressure ruptured, apoplexy and paralysis are the certain consequences, more or less. I wish to caution persons, however, from being alarmed at head-aches, for if they are not living in any excess, and have not good digestion, the greater probability is that the course of their uncomfortable feelings in the head proceed from nervous sympathy with the stomach. I have seen most distressing cases of headache, and heaviness there, cured entirely when the stomach has been put to right. The person's course of life is the guide to judge if there is danger of apoplexy.

Non-professional, and non-medical writer as I am, I have, since I searched into the principles of the nature and action of the human frame, been much struck with the often disregard and non-acknowledgment of some of the fundamental laws of existence in the ordinary practice of physic to cure, renew, or alleviate the delapidations of the frame. The wonderful discovery that the life of the body, and all its functions and powers of nutrition depend under God entirely on the vitality, electricity, nervous fluid, nervous power, *vis vitæ*, or power of life, or

whatever the life in the body is, or can be described by, exists in the nerves of organic life, is, as established, acknowledged, and undisputed a fact as the circulation of the blood.

I have frequently noticed this in this work, and it is a consideration that cannot be too much kept in view in all attempts either to keep the body in health or to cure disease; for it is an incontrovertible axiom, that on the *vis vitæ*, or electricity of the fourth order of nerves, depends the life of the body, the action of the heart, the flow of the blood through the veins, the power of adding to the muscular tissue, out of the blood. The functions of the liver, the kidneys, and in fact, every principle or minute action of the body, in regard to life and nutrition, depends on the vitality of these nerves, which carry their nervous fluid or electricity into every minute part of the frame, and by that electricity the organized body lives; only lower this to a degree and the life is quenched as effectually as the light from a taper when it is blown out.

This fundamental law, once discovered and proved true, as it long has been, since such men as Sir Charles Bell, and others, have improved so greatly on the discoveries of the ancient physicians, ordinary observers might naturally suppose it would be the very keystone on which medical men would always and at all times act. They acknowledge it in cases of severe injury. They refuse to operate with the knife when this power is evidently very low. They have little hope of what is termed a constitutionally nervous subject getting through a severe operation. They have little hope of a patient rallying when they see this nervous power all but extinguished. The difference between the flesh and the bone of the weakly or nervous patient, and that of a strong person, is not regarded. The consideration with the doctor is not whether the fibre of one is finer or coarser than another,—no, he looks at the amount of *life* it contains; and that governs his hopes or his fears for the restoration of his patient.

It is true some are serofulous, and have impure flesh; and he will tell you these patients are bad subjects for operations; they make bad blood and bad tissue. Ask him why, and he tells you (if he knows his profession) that there is a want of vital power in these cases to properly assimilate the food,—to expel morbid matter,—to vigorously renew the worn out tissue,—in short, to give life to the frame. All his arguments end in the acknowledgment that it is not the want of

more flesh, or of a different texture, but of *life* in it,—that is, the nervous fluid,—the electricity by which the body exists,—all else is mere gas and water, and silica and salts, held together by this wonderful *vis vitæ*, or nervous fluid.

I have a patient just arrived on the verge of an attack of apoplexy, who, I believe, was secure from seizure, soon as he entered my establishment, because we stop the causes of the symptoms, and set about determining the blood to other parts of the frame, by our fomentations, bandages, sitz baths, foot baths, &c., and teach the patient how to live in future. He has been what is called a regular man, I believe addicted to no excesses,—fully formed frame, and apparently healthy looking. He has erred simply from want of knowledge of the true conditions of health and life, and this is just what I hope my book will give to numbers and save them suffering misery and premature death. This patient has taken flesh meat in moderation three times a day, his glass or two of ale at dinner, and same at supper, with a glass of wine occasionally, and now and then a glass of spirit and water, and cigar. He is a not man of an excitable temperament, and to all appearance would be supposed to enjoy good health.

He came with a friend to my establishment, without any intention of staying on his own account; but he said he was troubled with an uncomfortable feeling in his head, which had been coming on some time. I soon convinced him he had no time to lose in escaping an attack of apoplexy. This regular man had no conception that his regular habits could possibly be dangerous to life, but as Dr. Cheyne justly observes, "The daily use of wine or spirits will lead a man of a certain age and constitution to apoplexy as certain as habitual intoxication."\* Plethoric corpulent persons, with thick short necks, are looked upon generally as the only subjects likely for apoplexy. This, as medical men know, is an error, as apoplexy occurs in spare persons, and persons of delicate habits, from absolute weakness of the vessels in the brain, and from another frequent cause, and that is hypertrophy. Dr. Hope, in his work on diseases of the heart, says,

"Eight or nine cases of suddenly fatal apoplexy, and numerous cases of palsy from hypertrophy, have within a few years fallen under my observation. In the majority of them, the patient exhibited what is

\* Hooper's "Medical Dictionary," p. 152.



commonly called the 'apoplectic constitution;' that is, a robust conformation, a plethoric habit, and a florid complexion; in others these characteristics were absent; but the total number of the cases of apoplexy from hypertrophy is much greater than I have witnessed, during the same period of apoplexy from causes independent of hypertrophy." So that whatever makes imperfect or morbid tissue, tends to this disease. Hypertrophy, from the Greek "above," and "nutrition" describes a morbid increase of any organ without change in the nature of its substance, arising from an excessive nutrition in some particular part. All these dissertations on the nature, and symptoms, and effects of disease, by such authorities I quote, tend to reiterate the advice to study the natural conditions of health, and obey them without regard to the cravings of the body.

PARALYSIS, from the Greek, "I loosen, or weaken." "A disease known by a loss or diminution of the power of voluntary motion," so says Dr. Hooper in his Medical Dictionary. He also says, "it may be occasioned by an attack of apoplexy." It may be occasioned by anything that prevents the flow of the nervous matter from the brain into the organs of motion. He says, "the long-continued use of sedatives will produce palsy, and whatever tends to relax and enervate the system may likewise prove an occasional cause of this disease:" yet he recommends bleeding, blistering, and active purges; also, that "certain narcotic substances have been found occasionally successful, as aconite, arnica, toxicodendron, nux vomica, and opium!" It is very true that narcotics, and purges, and bleeding, and blistering, will not restore the power of nutrition, and yet in face of this forced acknowledgment of nature's fundamental laws, doctors persevere in tapping the veins and letting out the vital fluid, and punishing the already sinking stomach and bowels by what is utterly opposed to nutrition, in the form of physis. One such case has just been at my establishment; a gentleman of fifty years of age, of sedentary habits, a tobacco smoker, taking his allowance of stout and bitter ale, with flesh meat two or three times a day, besides a moderate quantity of wine, regular in his attendance at his office in London, taking purgatives when his bowels would not act, to force them to do so; then by his doctor's advice a little sedative mixture when his overworked brain would not allow him to sleep well,

here a pabulum and there one, and these were to stifle every complaint which poor nature was making of the unnatural way in which she was being treated and doctored by his surgeon, the patient, and afterwards by some of the first in the profession, until she could bear it no longer, and the sedatives and the purgatives, and the lancet and the leeches brought the poor patient into such a sedative sleepy state, with the partial loss of some of his limbs, and total inability to bear any mental work, that he was all but put permanently to sleep. When this climax was attained by the usual legitimate process of the profession, the patient applied to an M. D., one of the very first in London, and the following is his nostrum for raising the vis vita of failing nature :—

[COPY.] December 8, 1856. Mr. ———

White vitriol half dr. Extract of camomile sufficient quantity to make 20 pills. Take one three times a day.

Tincture of Valerian volatile two oz. Camphor mixture four oz. Take one small table spoonful in a cup of water, with one of the pills as above.

This prescription was used a short time, but not accomplishing the end in view, was laid aside for the following :

Calomel one gr. Blue Pill two gr. Compound Extract of Colocynth six gr. Extract of Henbane one gr. Mix in two pills and take them at bed time. Infusion of Senna nine gr. Tincture of Senna two dr. Tartrate of Potash half dr. Manna quarter oz. Spirits of Nutmeg one dr. Mix, for a draught to be taken in the morning.

This again gave neither new life nor vigour to the patient, and the following was substituted, which proved just as useless—

March 8, 1857.

Citrate of Iron two dr. Distilled Water and Spirits of Nutmeg, each one and a half oz. Mix them, add Simple Syrup one and a half oz. Take one table spoonful in a cup of Camphor Water twice a day.

Extract of Aloes eight or twelve. Powdered Ipecacuanha two gr. Soap twelve gr. Mix in twelve pills. Take one at bed time.

This being only a repetition of the former long practice, made matters no better. When he came to me he had such an amount of pressure on the brain, and so sensitive to cold, with almost total constipation of the bowels from the long use of the “beautiful” and nice tasted sedative mixtures having done their legitimate work so effectually, that he could not bear washing over in water under 90 deg. A few weeks’ gentle fomentation to the stomach and bowels, tepid wash, with our soothing bandages, simple diet, fine air and water, and cheerful society, soon told beneficially on the grateful frame, but the poor

patient is a wreck, and will never be restored to anything like sound health again. If he had had advice early, to obey the natural conditions of health, eating and drinking to live, and not living to eat and drink, and sleep, he would not have now been a burden to his relatives and himself too, and a hopeless case of restoration.

I hope to be of far more use in preventing disease than in curing it, and especially in such serious maladies as apoplexy and paralysis, which are not entirely curable. I wish to point out the wisdom and duty of making the appetites subservient to the welfare of the body, a principle which too many have regretted they did not adopt before they were compelled to do so by their inability any longer to satisfy them.

Paralysis can only take place from the lowered vitality of the frame, or of the electricity in the nerves of nutrition, commonly called ganglionic, or organic, by which the nutrition and functions of the whole body are alone governed. The will of the paralytic is precisely the same in force as before the seizure. The mind sends its messages for action from the nervous centres in the base of the brain, through the medulla oblongata at the top of the spine, by its telegraph wires (the nerves), but when the message comes to some part of the body where the nerves have been by various means deprived of healthy vitality, the nerves of motion (which take their rise as before stated in the spinal marrow, as shown by the engravings,) will not answer to the stimulus conveyed to them by the nerves of sensation. The paralytic has often feeling in the affected parts, but cannot move them. There the nerves of sensation are perfect, but they are unable to stimulate the nerves of motion to act. In other cases there is neither feeling nor ability to move: here the nerves of motion and the nerves of sensation, which always accompany each other, are both deprived of vitality as far as the incapacity for motion and feeling extends. The power of expelling or retaining the feces and the urine often also participate in the calamity, and renders the retention of them either imperfect or impossible. I have often been told by my patients that they have hereditary tendency to paralysis. It is not an hereditary disease only so far as inheriting a weakly constitution. But a weakly constitution, by a strict adherence to the natural conditions of health, and if kept also from the vitiating effects of improper stimulating food, liquids, over-study, debasing passions, and the destructive influence of tobacco,

snuff, opium, &c., will be free from any hereditary tendency to paralysis.

In another place I refer to a lecture by Mr. Jolly, of King's College, on the tendency of tobacco to produce paralysis, which is well worth attention, coming from such a high authority. I can corroborate all he says as to frequency of the use of tobacco causing paralysis. The effects of deadening the nerves by the narcotic power of tobacco, snuff, and opium, and rendering them so often unable to do their work, is easily accounted for. Scores of cases of rheumatism which come under my care are produced by their use, and no smoker ever dies a natural death (that is, they do not live the term of life they would have done), had they abstained from these injurious drugs.

By using tobacco, liver disease, nervousness, congestion of the brain, paralysis, destruction of the mucous lining of the bowels, more or less, are the certain consequences, and it is only a slow way of suicide, and perverting the power God has given for noble purposes, to the gratification of the appetite\*. Paralysis is a terrible affliction,—not unfrequently have persons gone to bed apparently in their usual health, and found on awaking part of their frame paralyzed, very often for the remainder of life. At first, hopes of restoration in some degree mitigate the force of the blow, but when first one means is tried, and then another, with little or no relief, the mind often sinks with despondency, lowering still further the *vis vita* in the nutritive nerves, until further seizure comes on, and life is a burden to the sufferer, and often a burden to those who have to do the most menial offices for the poor wreck. I wish to do all in my power to warn all off these rocks, and to advise the keeping of the body for what it was intended, a temple fit for God's indwelling, and to be an efficient, quiet, comfortable dwelling for the soul to perform its high and noble mission in, and

**THE TOBACCO QUESTION.**—Five and a half millions of acres of land are set apart for the cultivation of tobacco. 4,500,000 pounds weight are grown and consumed. Ninety-nine parts out of every hundred are the produce of slave labour. Tobacco contains two very poisonous properties; one an essential oil, which acts directly on the brain and nervous system; the other a narcotic poison, which acts directly on the heart and the circulation. The smoker receives also into his system another property, which is generated by the action of fire, which is known as empyreumatic oil, and which inflicts very serious mischief. For a time the use of tobacco might in any form be resorted to without giving alarm after its first effects were overcome, but very few could venture on its use for any length of time without having very serious penalties to pay.



not to be the slave of the animal desires. "Be not deceived; God is not mocked: for whatsoever a man soweth, that shall he also reap. For he that soweth to his flesh, shall of the flesh reap corruption; but he that soweth to the Spirit, shall of the Spirit reap life everlasting,"\* and hundreds find this true to their sorrow, when the mischief is done, in sowing to the flesh.

Marital excesses, from the nature of the subject, I can only allude to. The public, or even the individuals concerned, often know little of its terrible effects until too late for remedy. I have seen many ruined for life from this cause; paralysis, apoplexy, loss of the use of limbs, madness, and suicide, are very often the dreadful consequence of these excesses. I have had the great gratification of seeing not a few who were all but wrecks from this cause, entirely restored by our mild system, and having a knowledge how to live in future.

I have said that persons go to bed apparently in their usual health; and find themselves paralyzed in the morning. I have heard this from the subject of the seizure, but it is not, in fact, correct. I can always, by questioning them on their previous state, show them that they had warnings, often for years before, but they were disregarded or not understood. Nature does not take the body by surprise in this way, but just as the stomach rejects food when it has been outraged by bad diet, or other causes, and gives unmistakable warning of the existing mischief and inability to perform its office, so flying aches and pains in the limbs, local numbness, cramp, coldness of some part, inability sometimes to lift weights from the weakness in the arms, cold shivers down the spine (which, as I have previously remarked, is the centre of motive and sensitive power), giddiness, &c. When these symptoms do not actually incapacitate individuals for their usual avocations, they are often thought little of until they become urgent, or are attributed to rheumatism—that, to the public, undefinable term for many ailments. Whenever a person experiences the warnings I state above, they should at once study how they can improve their general health; and this can only be soundly done by strict attention to the natural laws of healthy condition of the body. Long before paralysis comes on, the tongue will be red, swollen, and often cracked or red at the sides, and white on the surface: when this is the case, serious mischief to the whole

\* Gal. vi. 7, 8.

frame must inevitably be the result if not remedied. We do not, however, live in such glass houses that a few weeks' or even a few months' derangement of the bodily functions in all cases produces dangerous chronic or fatal disease.

Of all things I wish to caution persons from continually studying symptoms; continually thinking of the state of their stomach, and action of the bowels, for the reflex action of the nerves and sympathy with the brain will actually determine unnatural stimulus to any part of the body the mind continually dwells upon. How many look as anxiously to having a motion of the bowels as they do for their dinner, and think one is as necessary for their daily existence as the other. The keeping up this nervous stimulus weakens the very nerves and organs they are so anxious to act well. But some go to the other extreme, and take no notice of nature's hints until actual disease has set in. Business or pleasure cannot be interrupted: but nature has borne the transgression of her laws as long as there is power in the body to resist, and there is a point beyond which the strongest constitution cannot go, without ejecting the tenant; for although we do not live in glass houses, we do not live in cast iron ones.

I have not unfrequently had patients who have said that they have had white or furred tongues all their lives, or for ten or twenty years. They have said there was no chance of that being cured, and although they have not had good health, yet they have not thought much of it. But I have said, "What, then, has brought you here? for persons don't come to the water treatment and leave their business occupations for amusement." I have to point to their inability to sleep, to constipation, to rheumatic pains, to their yellow complexions and harassed countenances, and to their having tried for many years to get into a sound state of health by doctors' prescriptions, all without success. They come, in fact, just when nature has given some of her last warnings, and instead of punishing the body by the unnatural means of physic, blistering, &c., I immediately see which way we can soothe the frame, and coax it into good humour again by attention to the fundamental laws of health. And the instances are rare in which we find the appeal, by these means, to be in vain.

Paralysis proceeding from apoplexy is the most serious, because there is then mischief in the very centre of consciousness, and generally

rupture of some of the fine blood vessels in the brain (see apoplexy). Simple paralysis of some local part of the limbs, the arms, or legs, without any affection in the head, may be cured. In the spinal marrow, as before observed, the nerves of motion and sensation have their origin; these nerves may be slightly affected by accident, or simply by want of vital power, which is most commonly the case when there has been no affection of the head, and then by judicious bathing, diet, and general habits, new life is generated, and the nerves recover their original powers; and here our practice of spinal rubbings, cold back wash, cold dripping sheets, steamers, with cold shallow, or cold sheet after, cold or tepid sitz baths, fomentations back and front, with dripping sheet after; wet pack if there is vitality sufficient; dry rubbing, wearing wet body bandage, with our plain nutritive diet, and no stimulants, are such safe, natural, and simple remedies. The treatment must be proportioned to the strength of the patient, and if in cold weather, or in weakly cases, have water 70 deg. instead of cold. The plain diet, as stated in this work, with good air and water, are the most likely to restore nature's powers. Warmth is absolutely necessary in paralytic cases; good thick clothing if the weather is not warm, and all who can afford would do well to migrate to the warm climates of Exmouth, Torquay, or Penzance, for the winter and spring.

**HEART DISEASE.**—Many patients have come to my Establishment under the impression they had disease of the heart, some have been told so by their medical attendants (as was the case with myself some years ago, when I consulted an eminent surgeon in London.) Except in rare cases, my patients have found, as I did, that when the liver was got to act well, and the general circulation regulated by our soothing and invigorating dripping sheets, &c., and the passages opened for the easy flow of the blood through the liver and other organs, there was no trace of heart derangement. Many are very unnecessarily alarmed at some irregularity of the pulse, and occasional palpitation. All dyspeptics and nervous subjects are liable to occasional functionary disturbance of this kind, but where actual disease of this organ has taken place, nothing can be done but to mitigate its effects; and this may be accomplished to a greater extent by mild hydropathic operations, than by any other course. We have had some serious and distressing cases, and in none have we failed to give some relief. The treatment of course has

to be varied according to the strength and age of the patient, and the causes which have brought on the disease.

First, the diet is a matter of urgent necessity, to see to avoiding anything that is at all difficult of digestion, or of a stimulating kind. Little flesh meat, and that lean mutton or game. Avoid beef, and especially hot beef; a little lean cold meat chopped fine with bread crumbs, and a spoonful of gravy is good, and a little mealy potatoe, asparagus, or cauliflower. No greens, turnip, cabbage, nor any uncooked or fried vegetables; farinaceous puddings, good—as rice, tapioca, sago, vermicelli, or light flour puddings with a little stewed fruit and water to drink, bread in moderate quantity at one time, as it swells on the stomach—buttered toast and cakes, bad.

If persons with heart disease have not the strictest and most determined resolution to take food with a view to the nutrition of the body alone, and without regard to the tastes and appetites, they are continually in danger of sudden death; and great numbers go off from want of this resolution and self denial. I have known individuals well aware of having this malady, and of their danger, who, unwilling to resist the cravings of the appetite, have passed from their business or quiet fireside, or their comfortable, luxurious drawing rooms and social circle, into eternity, totally unprepared for a spiritual existence. The forms of religion they had practised amongst various denominations of christians, with whom they had passed as sound good people, had never really awakened them to the great import of the apostle's words to the Phillippians: "Whose end is destruction, whose god is their belly, and whose glory is in their shame, who mind earthly things." Those who are left behind enter the body, leaving the soul to the mercy of God, and go on in the same course; some to die of heart disease, others of sudden inflammation, dropsy, brain attacks, apoplexy, &c., not a few of such instances I can now call to mind amongst those whom I formerly joined at table. (See page 32.) If any person should read this who has any symptoms of overfeeding, of fullness in the head, palpitation, &c., let them at once make a resolution to discard all but the plainest food, and reject stimulants, tobacco, &c., *in toto*.

When we first went to take up our summer abode with our friend Mr. Allen, at Riber Hall, I saw his danger from his naturally remarkably healthy constitution, and having plenty of fresh air and little care.



His cerebral nerves were not in the least disturbing his nutritive system, but giving it the benefit of its superabundant vitality; and although he was what would then be called a very plain liver, yet he was, as a physician remarked who called upon us,—on the high way to heart disease or, what is so nearly connected, apoplexy. The little ale or other stimulants he took I persuaded him to relinquish, to sign the total abstinence pledge, and to avoid any supper. He is now safe from these attacks; lighter, and happier; saves the money for other purposes which was injuring himself and the friends who came to visit him. I have the satisfaction to know the advice I have given on such subjects have rendered hundreds happier, and safe from sacrificing their lives to the gratifications of the appetite.

*As to the hydropathic treatment of heart disease*, the object that must be aimed at is to draw away from the heart the inflammatory action and the pressure on the weakened vessels, and infuse new life into the muscles. This must be attempted by the gentlest means, as it will be obvious to any ordinary observer, that the heart having to receive and pass about a hogshead of blood in the twenty-four hours, the wonder is, that it stands its work at all. The blood has to be forced through these often weak or stiffened valves and muscular cavities. They are obliged to do their work as long as life lasts. Not one minute can the often almost disabled ventricles and auricles rest from their labour. They must open to admit the new and old blood, which comes to them from the clavicular artery, to be propelled with force into the lungs to come in contact with the air to take its life giving property,—oxygen. We see the effects on the muscles in the legs, knees, arms, and wrists being weakened, hardened, or contracted; and those who are in that condition feel the pain of working them in that state. Now in a similar way the powerful muscles of the heart become stiffened, contracted, and inflamed; and when this amounts to a certain degree, the heart stops, and the person dies.

I can only of course give, as I have before said, a general idea of the treatment; as it will be varied according to the strength or age of the subject. We first insist upon our plan of diet and rest from harassing business cares.

On rising, and whilst the patient sits up in bed, give the upper part of the body a gentle rubbing with a towel wrung out of water 80 degrees,

then dry this part and put on woollen vest, and let the lower part of the body be done in the same way, and put on woollen drawers, for it is of importance to keep the lower part of the body warm. Forenoon, have legs up to the calf put into 90 deg. mustard and water, and gradually raise the temperature to 100 or 105 degrees, if the patient can bear it, keeping the head wet with cold water whilst in, and remain so for from ten to fifteen minutes; and then let legs and feet be rubbed over with a towel dipped in 80 degrees, and dry rubbed with hand as on rising. Afternoon, have the feet put into 90 degrees mustard and water for three minutes, then give trunk pack, (see page 54) wringing the towel out of 90 degrees water, and keeping hot foot tin to feet. Lay so for three quarters of an hour, but if restless, then only twenty minutes; then on coming out sponge over the part packed only. Bedtime, apply a mustard poultice just *below* the heart, and keep it on till red, then wipe it off dry.

It is very useful in these diseases to take long sitz baths in 80 degrees water, or the degree of heat that will prevent chilliness, remaining in them for twenty to forty minutes, keeping feet warm with the sitz bath, hot foot pan, (page 55) or any similar plan, as it is not advisable to have the feet so often soaked in hot water. Packing the legs and thighs with strips (see page 45), renewing them when dry, and keeping them so till a "crisis" is well worked out upon them, will be found very advantageous. Sometimes a piece of spongio piline worn on the heart, and kept damp with *hot* water, has been found very useful if it does not bring on irritation: we have used this in cases with good effect. The reader will see in all the above treatment great care must be taken so that none of the applications produce a *shock*, as that would be highly dangerous. Frequently sipping cold water will be a great assistance to the benefit of the treatment. During syncope or faintness, it is best to undress the person immediately, and apply a mustard poultice to the heart, and put the feet into mustard and water 100 degrees, and if possible the hands also; then well dry. Rub the other part of body whilst the person is wrapped in a blanket, sponging head and face with cold water, and giving sips of cold water to drink. When the attack is gone over, let the person recline and put mustard poultices on soles of feet, and a warm (not hot) fomenting pad to the lower part of the bowels, keeping head wet and the rest part of the body very warm.

Dr. Gully says, "but after all, the malady to be treated is irritation of the ganglionic nerves, at the pit of the stomach" (which I have so often called attention to). Other scientific authorities take the same view, and the treatises written on the subject are no doubt in the main correct, but I am surprised to see so little said of the muscular structure of the heart in connection with rheumatic affections of this organ. Rheumatism attacks the muscles and renders them stiff, and often causes chalky deposit; and the great muscular structure of the heart (for it is in fact all muscle, and always in work) must render it as liable, and even more so, to rheumatic affections, as any other muscular structure of the body, and from the same cause, lowered vitality. Ossification of the valves of the heart describes the state approaching to chalky formation in the valves.

Rheumatic affections of this organ are much to be dreaded, as there is no rest for it, and these muscles, as all other muscles, are liable to lose their elasticity and vitality, and unfortunately we cannot get at them direct with fomentations, or other stimulating or soothing water applications. Whatever is to be done for relief, can only be done very indirectly by the treatment I name, and by proper diet, avoiding all stimulants, much flesh meat, and none at all difficult of digestion, as beef or fat. The great point to aim at, as before stated, is to draw away inflammatory action which is certain to be present, whether the disease is rheumatic, or deposit of fat, &c. All these affections tend to obstruct the circulation, and call upon the heart for excessive efforts to propel the blood, and hence the inflammatory state.

The heart is liable to obstruction from deposit of fat in great feeders, and to unhealthy enlargement by peculiar constitutions. Opium, morphia, foxglove decoction, henbane, and such-like drugs will lower the action of the heart when excited, but they do it by lowering the circulation altogether by, in a degree, putting the brain to sleep. This will easily be seen to be false practice, never can give nutrition, and certainly leads to mischief and increased action from weakness.

**HYSTERIA or HYSTERICIS.** Immediately undress the patient, and commence hard rubbing with the hand, well wetting the head, and as soon as possible put the person into a shallow bath of 80 deg. water, and well rub whilst in, especially round the region of the heart and down the spine; and if the patient is not too delicate, a can of cold water poured

down the spine would be very beneficial. When the violence of the attack is over, then put the patient between blankets on a bed, and apply mustard poultices to the soles of feet, and keep the head well packed, and something warm over the bowels. A fomenting can is best. If a shallow bath is not at hand, then let the person sit down in a sitz bath, or large pan, in 80 deg. water, and put the feet into 105 deg. mustard and water in another vessel at same time, applying the rubbing and cold water as before directed.

**ERYSIPELAS.**—If only slight, then apply tepid sponge 70 degrees very frequently, according to the heat of the part, and after the sponging put on a piece of spongio piline over the part affected, damped with cold water; or if no spongio piline is procurable, then apply a piece of linen doubled and well wetted, and then a dry bandage over of macintosh or flannel. If the attack is severe, fomentation to the parts should be used for a quarter of an hour; then apply the above process of sponging and packing afterwards, frequently repeating till fever is gone. Constitutional treatment should also be used, such as warm dripping sheet on rising, twenty minutes 86 degrees sitz bath, twice a day, and fomentation on the bowels a quarter of an hour at night, (not too hot) wearing the body bandage regularly. Keep the feet in 105 degrees mustard and water during the sitz bath. Sometimes omit one of the above sitz baths, and take a fomentation pack instead. *Fasting* is a great help to the cure of this disease, only taking cold water, and now and then a little piece of bread until convalescent. We always and easily subdue this formidable complaint by our Hydropathic practice.

**SPINAL DISEASE AND INJURIES OF THE SPINE.**—When real disease of the spine has taken place, either by a strain of the back or a blow, or from effects of diseases which more particularly affect this part, little can be done, and that only to alleviate. I have not known one entirely recover, I say this to warn persons from those experiments which are so often tried, and which I have known end in total paralysis of the limbs. Females not unfrequently complain of pain and weakness in the spine, especially in the lower part, which has in reality no relation to disease, but proceeds from internal operations of nature peculiar to females, and which is removed by judicious treatment of sitz bath, bandages, and general attention to the health. Many, however, are



treated for disease, or affection of the spine, and received permanent injury ; we have had such cases from the hands of eminent physicians.

This work is too limited to go into the general subject of diseases of the spine, but I give a list of works which will give more particulars. First, where there is known injury to the spine, we use the spinal compress day and night, wetted three times per day, until it brings out a crisis, and also the body bandage partially ; very gentle fomentation to the spine, (not hot) for one hour, and then sit on a sitz bath, and wash the spine with flat hand gently for one or two minutes, and water nearly cold. Legs up to the calves in hot mustard and water, ten minutes ; this not more than once a day.

Gentle spinal slapping, as at page 59, good : but any application which strongly stimulates or shocks the nerves must be avoided, the nervous centres will not bear it.

Keep in a reclining position as much as possible, and adopt the simple diet recommended in this work. All stimulants, narcotics, and tobacco are bad ; much flesh meat to be avoided ; anything that is heating is highly injurious. Warm clothing should be worn in cold weather, as the nervous vitality of the whole frame is greatly lowered. Should the patient be induced to use lotions, blisters, or setons, he will certainly repent, but having once used them, regret will be of no avail.

If the calico spinal compress does not keep warm, use spongio piline.

**THE CROUP.**—Directly the symptom is discovered, let the child's feet be put into hot water ; undress it, and apply a hot pad to the chest ; when this is done, then get ready a hot bath for it, where it can be under the water entirely, just supporting the head, and keeping it wet with cold water (or putting a cold cloth round it) ; well rub the child with hand whilst in, especially the chest, and as soon as it begins to perspire, then take it out, and sponge it quickly down with some water, eighty degrees, and then put it into a warm blanket and foment the chest, and put mustard poultice on the soles of the feet. Repeat the above if the attack does not go off quickly ; and after the attack let the child wear a spongio piline chest compress regularly for a month or two, keeping it damp with hot water.

**LOSS OF VOICE.**—On rising have the chest and throat rubbed with 70 degrees water, till red, then wet pack the throat, and put

on a spongio piline chest compress, *dry*, and a piece of new flannel round bowels; then put feet into 100 degrees mustard and water for three minutes, and wipe them with a towel dipped in 80 degrees water, and *dry* rub with hand. Forenoon, feet and legs up to calves in 100 degrees mustard and water for ten minutes, and rub the chest and throat again, as on rising; then pour a can of cold water over the legs, and *dry* rub them with hands till warm. Afternoon, take a running sitz bath 80 degrees for ten minutes, and daily cool this bath till it can be taken cold; rub chest and throat again as before. Bedtime, repeat the rubbing on throat and chest, and put feet into hot water two minutes, then put on wet and dry socks, only wetting the soles of the socks, and keep them on all night. If the above does not speedily produce an effect for good, then apply fomentation on chest morning and night for fifteen minutes before the rubbing, and also put on occasionally a mustard poultice till red over the chest.

CASE OF BURN.—Our servant, suddenly taking off the kettle from the gas stove, and leaning over, the large jet of gas came in contact with her face, and rather severely burnt her. The face was immediately washed over with brown soap and water, as hot as she could bear it, then steamed over a pan for half an hour, the soaping repeated, and the steaming again repeated; afterwards, a spongio piline mask, sprinkled with hot water, made to cover the face, with holes for nose and mouth, was put on, and a cold wet cloth to the head, and after lying in bed one hour, the steaming was again repeated. and by morning the case was all but well; she laid aside the mask, and felt no inconvenience. Had cold been applied, or oil, or grease, it would have been a serious case. If spongio is not at hand, calico, wrung out of hot water, and covered over to keep the warmth in will do.

BURNS AND SCALDS.—If the burn or scald is upon any part where steam can be brought to bear upon it, immediately get a pan of boiling water, and put some coles off the fire into it, and hold the part over the steam, covering that part of the body and the pan of water with something woollen; after doing this for twenty minutes, then put a cold wet bandage of linen or soft calico round and round the limb, or a large piece, if it is on any other part of the body, then some macintosh, or oil silk next to the wet linen, and new flannel over all; if no

oil silk or macintosh, then put plenty of dry calico before the flannel bandage. Keep repeating the whole of the above three times a day till all inflammation is removed, then proceed with all the bandages, without the steaming, till the place is well.

**MEASLES.**—As soon as the child appears sickening for this disease, or any other skin eruption common to children, immediately put the child into a pack (see article on wet pack), and give it two packs a day, morning and night, till the whole body is fully out with the rash; then stop packing altogether, and do nothing but wash the body with water eighty degrees, twice a day, morning and night, and oftener if the rash is very irritable. Keep the child warm, but not hot: and keep it quiet, and not give it much food, but as much cold water as it likes to drink. Pack with napkin or towel. The same treatment for adults, only pack with sheet.

**HOOPING COUGH.**—The first thing in the morning, foment the chest (see article on fomentation) for a quarter of an hour, then put the child in a wet pack, making this difference to the general pack, viz.: first wrap the feet and legs to above the knee in flannel, then take a towel, only large enough to go down the front of the body from the neck to the flannel edge: wring it out of hot water, and then proceed as usual. After the sponging over, put on a chest compress, made of spongio piline, or calico, and a body bandage, calico and oil silk, both squeezed well out of hot water, and wear these regularly night and day. Afternoon, give a mustard and water foot bath, eighty degrees, for a quarter of an hour, and well rub the feet dry with warm dry hand, and put on wollen socks. Bedtime, give a hot and tepid bath, as stated in fever cases, and renew the chest and body bandage with hot water, and put a mustard poultice on the soles of the feet to be worn all night if possible.

**WHITLOWS, OR GATHERINGS ON FINGERS.**—Place the finger in a glass of cold water three times a day, fifteen minutes each time; then pack the finger and hand, or put on a spongio piline hottle kept wet on finger; then twice a day place the elbow in cold water, and the cure will be hastened by packing the arm also.

**ULCERS, WOUNDS, AND RHEUMATIC PAINS IN LEGS AND THIGHS.**—Put the legs into a leg bath so as to cover the parts

affected. The object of these baths is to act as stimulants; they may be taken for an hour, and sometimes longer,—they always accelerate the action in abscesses, and cause an abundant suppuration, and consequently sooner discharge the morbid matter out of the system. The same are also applicable to any other members of the body afflicted in a like manner.

**CHILBLAINS.**—If not broken, put the parts affected into as hot water as can be borne, and raise the heat when in, for two or three minutes till the parts are very hot; then put them immediately into another vessel of cold water, just one minute, then rub dry and warm with dry hand. Let this be done whenever itching is felt, and a cure will soon be effected. But if broken, then apply the steaming process as directed in article upon Burns and Scalds.

**FOMENT PACK.**—Having had this year some very bad cases of stagnation of the vital powers, I have tried with great success what we call a fomenting pack, that is, in addition to the directions for wet pack at page 43, wring a fomenting pad out of hot water, as at page 46, and lay it under the shoulder and back, on the blanket, and another hot pad on the front of the body; then wrap up in the wet sheet. Next bring one side of the blanket over and put on the hot fomenting can, then the other side of the blanket and the macintosh sheet, &c., as in wet pack, followed by same application as after wet pack.

**TRUNK PACK AND TOWEL PACK.**—Prepare macintosh sheet and blanket as in wet pack, and have half wet sheet or towels to wrap the body in, leaving out the arms, and pack in a similar way. The lower part of the person need not be undressed for this, unless preferred.

**SITZ BATH HOT PAN.**—This is a pan twelve inches by fourteen. The bottom three inches deep made water tight, except a hole and plug to fill it with hot water. The sides raised above this three inches. A flannel pad, only one or two thicknesses, laid on dry, for the feet to rest upon when the person is using sitz bath, covering the feet over with a dry flannel, or altogether wrapping the feet in it. This will be better than putting the feet so often into mustard and water.



**PILES.**—The following extracts are taken from the new work, "Diseases of the Rectum," by Richard Quain, F.R.S., Professor of Clinical Surgery in University College, London. Second Edition. London; Walton and Maberly. 7/6. It contains four beautifully-coloured engravings, of which I give a rough sketch further on (see Index). The work treats fully on Piles, their causes, Prolapsus Ani, Fistula, and all ailments of the seat and lower bowel, with an account of one hundred cases, and is well worth perusal, only for the physicing recommended, all of which it is evident the author himself has little confidence in, as will be seen by the extracts. All the important points he recommends for prevention or cure, can be accomplished by our Hydropathic plans, without one grain of medicine. As to the cure of Piles in some of the stages, surgical operations are absolutely necessary, but not physie.

**"HÆMORRHOIDS: PILES.**—The technical term, strictly or etymologically regarded, means a discharge of blood merely. Though at one time used in a more extended sense, it has been restricted for a very long period to disease affecting the rectum; and vascular tumours of that part, whether attended with a discharge of blood or not, have been named hæmorrhoids.

"Certain distinctions are admitted by surgeons:—thus, a very old one, according as there is or is not a loss of blood, 'blind' or 'bleeding piles,'—'hæmorrhoides cæcæ' or 'apertæ' of ancient surgery; and again, according to the position, whether the tumour be in view or concealed within the bowel, 'external' and 'internal.' These distinctions are preserved, and we shall by-and-by see that, like most things which stand the test of time, they are not immaterial, inasmuch as the position of the tumour and the condition indicated by the terms referred to, have their influence in determining the method of treatment. Why this is so, we shall see hereafter. The disease seldom affects the very young; but it is remarkable, that few persons attain to middle life without suffering from it more or less. It is met with equally in both sexes. The degree in which it affects different persons is very various, and it has a tendency to increase if unchecked.

"You will find it stated in books, that enlargement or induration of the liver is a cause of piles; so also, that abdominal tumours, and

pregnancy in the female, give rise severally to this complaint. The statements are quite correct. I have repeatedly seen examples of hæmorrhoids existing in connection with each of these conditions, and probably occasioned by them; but in far the greater number of cases the hæmorrhoidal complaint exists without any other appreciable organic change. For the origin of the local disorder in our patient, we must, therefore, look elsewhere. I found a case that had, for a few years, led a very inactive life; that he was in the habit of sitting in his chambers nearly all day, and up to a late hour at night, only relaxing when he went to dine at his club. He ate a full dinner usually, and drank a moderate quantity of beer and wine. Frequently, in consequence of a feeling of fulness and throbbing in his head, which interfered with sleep, this gentleman, of his own accord, resorted to the use of purgatives, and, under eminent advice, he also took, during some time, various medicines—among others an alkali with hydrocyanic acid. These means, however, produced no lasting improvement; and it is not probable that any drug would have been permanently beneficial while the habits of the patient continued unaltered. For, with such a course of life, while blood was formed and doubtless in abundance, there was but little demand for it, so to say, except towards the brain and the digestive organs. The muscles of the limbs were little used. The skin was inactive. So, likewise, judging from the torpor of the bowels and the character of the evacuations, was the liver. By such circumstances, the congestion of the head and of the alimentary canal may be reasonably accounted for.

“But how in such a case is relief, and that as permanent as possible, to be afforded? My answer is: Not by the continued use of drugs, but by attention in detail to the various circumstances which conduce to the maintenance of a healthy state of the system. Thus, while the diet is regulated—made more moderate in quantity as well as less stimulating, *the skin is to be thoroughly cleansed by daily ablution.* Active exercise is to be taken, for, at least, a couple of hours each day, afoot or on horseback, and the effect of this, it is to be borne in mind, is all the more salutary if a degree of perspiration accompanies the vigorous exercise of the limbs. By the action of the skin (which is one of the great emunctories of the system), and the increased nutrition of the muscles, the internal congestion, before adverted to, is removed or prevented; and a feel-

ing of lightness and elasticity—of health, in a word—is substituted for the former feeling of heaviness and discomfort. It is not always easy to convince people that medicine cannot safely be made a substitute for moderation in diet, pure air, and exercise of the limbs—in short, for all the natural circumstances which experience shows to be necessary for the preservation of health. To the person of sedentary habits, the aperient drug gives relief for the moment, as it not only evacuates the bowels, but also unloads the blood-vessels of the abdomen in a degree, by exciting a serous or watery discharge from them. When absolutely necessary, and for an occasion, the purgative is as salutary as it is an efficient aid in the removal of the attack of illness. In this way, it is really beneficial,—not so, however, its continued use. Besides, the fact is not to be overlooked, that the frequent resort to aperient medicine creates a strong desire for the continuance of the practice, owing, it is said by those who experience the effect, to the sense of ‘ease and lightness’ it occasions. So, in time, a habit is created—one, too, as difficult to be got rid of as any other habit.\*

For the general management of the class of cases alluded to in the foregoing observations, the rules laid down in a former part of the lecture are applicable. An acute attack is conducted to its termination in the same way. When the state of the local malady admits it, active exercise is to be taken, so far as the condition of the patient's strength allows. The same attention to the state and the functions of the skin is required; so likewise is the same watchfulness respecting the quantity and the quality of the food to be observed. Yet, even with good management in these respects, habitual sluggishness of the bowels often accompanies the hæmorrhoidal disease. The use of aperient medicines then becomes necessary. When resorted to, the aperient medicines ought to be such as unload the bowel with the smallest degree of irritation, and the quantity as small as shall be sufficient for the purpose. *Purging or looseness of the bowels gives rise to pain and aggravates the local*

\* “A few years ago a case came to my knowledge which will serve to illustrate the baneful influence of the habit of using purgative medicine. The commander of a merchant vessel, a person of robust frame and much ability in his profession, began to take Morrison's pills to relieve constipation of the bowels at sea. Continuing the use of the medicine, he became in time reduced to extreme debility from constant purging. At length the appetite grew by what it fed on to such an extent, that when confined to his bed from mere weakness, and unable to swallow the pills whole, the unhappy man had them bruised in a mortar, and took them with a spoon. He died of the drug.”

*malady.* That condition is therefore to be guarded against as much as constipation. A few words may be added respecting the medicine to be used when medicine is absolutely required. Common opinion has assigned to castor-oil a character of blandness (probably because of its being an oil) to which it is not entitled. It is an efficient purgative, but, except when given in minute quantities, it usually irritates the rectum. At the same time, it is expedient that no effort should be wanting to attain the end in view by the management of the diet and attention to other natural circumstances, rather than by direct action on the canal either by the use of drugs or of the other expedient adverted to.\*

"The points which I propose to notice in connexion with the foregoing cases are these:—The nature of the hæmorrhoidal tumour; the probable cause of the disease; the circumstances which rendered an operation necessary; the object and plan of the operation.

*Structure of Hæmorrhoids.*—Before proceeding to comment upon the details of the foregoing cases, I propose to lay before you some account of what a hæmorrhoid is—a matter upon which some diversity of statement will be found among surgical writers. The subject will be the better understood if the natural disposition of the blood-vessels of the rectum be first examined. This, moreover, will have its use hereafter in other parts of our inquiries; and it is the more necessary we should enter upon the investigation, inasmuch as there is not, so far as I know, an adequate account of the arrangement of the vessels in the intestine itself, to be met with in books of anatomy or surgery.

"The rectum is largely supplied with blood. The vessels as they are seen on its outer side are large, and they send branches at intervals through the muscular coat, which ramify between it and the mucous

\* "Sir E. Home and Sir B. Brodie say that the advantage is derived from the immediate contact of the confection with the diseased part after passing undigested through the intestine," and gives a curious application of the prescription by a patient. It is evident, however, this plan is less likely to injure the stomach. "In confirmation of this view of the *modus operandi* of Ward's paste, I may mention (says Sir B. Brodie) an observation of the late Sir Everard Home. He had a patient labouring under piles, and he recommended him to take Ward's paste. The patient, little thinking that something put into the stomach was to cure disease of the rectum, crammed as much as he could bear up the rectum. I dare say it gave him a great deal of inconvenience, but, as Sir E. Home reported, it cured him; and Sir Everard said that since then he had used it as a local application in some other cases with manifest advantage."—Lectures in the 'Medical Gazette,' vol. xvi."



membrane. Independently of their position as regards the coats of the bowel, the arrangement is not the same throughout the rectum. Over the greater part the arteries and veins, taking both systems of vessels as following the same course, penetrate the muscular coat at short intervals, and at once divide into small branches, which hold a transverse direction, and form a net-work by their communications with the subdivisions of other similar vessels (plate 1, *b*, Piles). Towards the lower end of the bowel, for the length of about five inches, the arrangement is very different. Here the vessels have considerable length, and their direction is longitudinal. Penetrating at different heights, they are directed in parallel lines towards the end of the gut. In their progress downwards, they communicate with one another at intervals, and they are still more freely connected near the orifice of the bowel. In this place the arteries all join by transverse branches of good size (plate 1, *a*). The veins form loops, and anastomose with equal freedom (plates 2 and 4).

“The alteration of the veins from which the hæmorrhoidal tumour results, takes place in the loops, which they form inferiorly. As would be expected, the change is progressive. At an early stage, dilatation occurs, which in one part is gradual—fusiform (plate 2). In another it is abrupt, starting suddenly out from the end of the loop into a rounded pouch. A degree of elongation of the looped part accompanies these changes; so that the vessel is lowered beyond its natural level (plate 2). During these alterations, the dilated vein still circulates fluid blood. In a more advanced stage, the dilatations are still further enlarged, and they are found to contain clotted blood, or fibrinous matter. From the aggregation of veins thus dilated in different ways and in different degrees, loaded also with blood or one of its elements more or less solidified, the hæmorrhoidal tumour is formed. The rounded masses which fringe the end of the rectum in plates 3 and 4 were soft and pulpy, and they appeared on section to be no more than coagulated blood, which, however, did not escape, and did not admit of being turned out of the general investment, as it would be if the whole were blood. When unravelled out as far as could be done, and inspected with a lens, the swellings were recognised as consisting of veins looped and dilated in the manner before mentioned. They were also found to be an extension of the veins above them, which were

themselves enlarged, tortuous, and thickened throughout. (plate 4)"\*

*Hydropathic Treatment of Piles.*—The first point to attend to is the improving the general health, and especially to procure natural action of the bowels. This is done by general treatment, dripping sheets, wet packs, fomentations to the bowels, and the sitz bath, according to the strength, circumstances, and condition of the patient. The sitz bath should be freely used, but not for a long time cold, except in slight cases. We prescribe it fifteen minutes at 70 degrees, and then let down to cold one minute, three times a day. Fomenting pack, as at page 129, is very efficient where there is obstinate constipation, and if this cannot be had, a fomentation, as at page 46, and hot and cold dripping sheets. The wet body bandage should be worn night and day, with flannel wrapper over it in the night, if it is not oppressive; this will soon bring life into the viscera. A 70 degrees sitz bath should be taken before getting into bed, for eight or ten minutes, and be very careful to cover the body over with a blanket whilst using the sitz, to prevent chill. Same in the morning, but cold, before having the dripping sheet, or washing sitz. All stimulants, and heating condiments must be avoided, and the less flesh meat the better. Coffee or tobacco bad. Drink five or six tumblers of water per day, by sips, or more if agreeable.

If the piles are of an aggravated kind, and protrude in dark bags round the seat, there is no remedy but the ligature, and this, of course, can only be safely applied by a surgeon. Quain gives some cases of cure, and I again strongly recommend his work for the perusal of any seriously afflicted; but beware of the physic, the use of which the author himself so strongly cautions his readers against. After the piles have been subdued, the use of the cold sitz bath should be persevered in regularly, for as piles are liable to return until the bowel has recovered its natural condition, the use of the cold sitz will strengthen and stimulate the vessels in the rectum. The habitual use of the cold sitz will always prevent piles coming on.

SKIN DISEASES.—I have had some desperate cases of this kind. I do not admit any into my establishment, nor allow them to use any of

\* "I acknowledge with pleasure the assistance received from my friend, Professor Ellis, in making the preparations upon which these observations have been founded."—Quain.

my baths ; but they can be treated in lodgings entirely. We had a gentleman with a frightful skin disease in the head, the hair full of scales and scurf, and partially over the face ; he had tried a hundred nostrums without relief, and was almost maddened at his state, as he could not go into society, the scurf flying off his head and face on to any objects near him.

I had no doubt of his recovery ; soon as I saw him I said it was only a question if he would have patience, and give time for a perfect cure to take place ; he staid, had patience, and was perfectly cured, and, as a necessary consequence of the treatment, was thoroughly restored to general vigour. Treatment to invigorate his general health was at the same time adopted. The hair on the head was first cut close as possible, and a spongio piline skull cap fitted on and tied under the chin, and made to come well forward. The head was very gently and carefully combed every day, and as much scale got off as possible, and washed twice a day with a strong lather of brown soap suds. The cure was effected in two months.

In another case the lower part of the face was attacked ; the beard full of scales and scurf, extended down to the throat and to the whiskers ; the lips greatly swollen. Two years' allopathic treatment had been tried in vain. Ointments, caustic, twice salivated under the idea of purifying the system, by putting nasty minerals into it ; and when several eminent practitioners had been baffled in their attempts to give any relief, the last surgeon, under whom the poor patient had put himself, said he must now try some desperate remedies. The patient must go to a country village, where he could have good air, and he must screw his courage up to the standing point, to bear the operation of having the fungus and scales burnt off with caustic entirely, to eradicate the unnatural growth, which extended from one to two inches in thickness round the jaws, chin and throat. Just when he had made up his mind to submit to this terrible ordeal, he was advised to come to me for advice. He came, and was entirely cured, and without pain, and without any applications to the diseased part, but damped spongio piline made to fit all over the part, and re-wetted by sprinkling with warm water three times a day, washing the part with brown soap suds, and sponging it off with warm water, taking care to keep the spongio as clean as possible, by having two or three sets, and cleansing them. This

first operation, as will be seen, was only negative treatment, and to keep the part soothed, and above all cleansed, and preventing the poisonous, infectious matter from being re-absorbed. The point to depend upon for the casting off the disease was our universal remedy,—attack the malais, the disorder in the irritated inflamed mucous membranes, in the stomach, liver, and bowels. Put plain, natural nutritive ailment into the stomach, raise the vitality of the nerves of nutrition, mildly stimulating them with our nice fomentations and packs, with hot can; comfort the liver and bowels by the same plan; determine the contents of the gorged congested blood vessels in the viscera to the surface, open the seven or eight millions of pores in the skin to let out the waste morbid secretions, which had never been thought of, for the doctor's attention was drawn to cure the chin only. The skin and the stomach, the liver and the bowels were, however, of near kin to the chin, and would not allow the chin to have the benefit of the scientific operations without sharing in the expected relief. Our mild and natural means, without any claim to scientific practice, very soon brought this patient into a sound state of health, leaving nature, good air and water, with regular hours and cheerful society, the credit of curing,—not cold water, physie, or our science. Various eruptive skin diseases we have cured by the same means, and never failed in a single case; and the vast advantage of a cure by these means is, that the entire frame must necessarily be renewed at the same time, and without any painful or disagreeable operations.\* It is marvellously humbling to own one is only a nurse after all, and with one nostrum to cure all,—that treatment which raises the vis vite in the ganglionic nervous system. And no physician can cure but by doing this.

I visited a retired physician last year, one who had been in the highest practice; he said he was formerly called in consultation with another M. D. of longer standing than himself, to the case of the brother of the late Sir Henry Hallford, surgeon to the king. The other physician asked my friend what he thought of the case; "nay," says the latter, "you are my senior, and I wait to have your idea of the case." With a shrug of his shoulders, he said, "I must own it is rather humiliating to confess that the longer I live to practice, the more I see the mischief of drugs. I give bread pills usually, and trust to nature, diet, good air, insist upon

\* See work on Skin Diseases, at the end.



quiet, no stimulants, and patience ; and, except in very urgent cases of acute disease, or surgical ones, the practice answers best."

**ASTHMA.**—There are various kinds of this affection and mostly incurable, but we have often given great and even permanent relief by the following plans. Foment the chest, and then apply half chest spongio piline damp compress, and wear this or a calico chest compress\* whenever breathing is difficult ; and also wear a wet body bandage occasionally, to keep the stomach and bowels in order, with sitz bath, but not cold, say 80 degrees.

Maw's Respirator\* will be found of very great service in going out in cold or foggy weather, and may be kept on all night without inconvenience ; this is very necessary if the asthmatic subject sleeps in a cold room. Stimulants, tobacco, or much flesh meat, aggravate asthma greatly. During a paroxysm a hot water shallow bath ten minutes, and after, a tepid wash down is very good ; or, if shallow cannot be had, a hot sitting bath and sponge over in tepid water. Throat pack very useful. Over-excitement, late hours, irregular living, will aggravate the chronic state of the disease. Warm clothing in winter is essential, if the climate be cold.

The case of a lady, about thirty years of age, suffering from spasmodic asthma, brought on by bathing in the sea, about nine years ago, has been treated at our place with but very little success, from the obstinacy of the complaint, but having heard of a practitioner in Ireland who was treating this complaint with success, at our recommendation she has now been under his care for several weeks, and expresses the greatest satisfaction with the treatment, and confidence in being cured. Before this book is finished I shall be enabled to give the results further on.

**DROPSY.**—The varieties of this disease and the causes can only be studied in the works of professional writers on the subject. The ordinary form of dropsy, with the swelling of the whole body, is one we have very successfully treated, when it has not been the result of heart disease ; even then life has been prolonged and ease procured up to the moment of death. One such case, a female of eighteen years of age, was left to die by her doctor ; he had assiduously attended her, and done everything in his power for her relief, but in vain, and he expected

\* Solomon Maw, Aldersgate Street, London. Price 5s., or 5s. 4d. per post.

her death every hour. In this state she was removed from her cottage, some distance from our house, to our free hospital, at the risk of dying on the way; but it was her earnest desire, for she greatly dreaded that death she was not prepared for. We began with fomenting her stomach and bowels as she reclined in an easy chair, and steamed the legs; afterwards wiped the body and legs with a towel wrung out of tepid water, then packed the legs with strips of calico wrung out of warm water,—macintosh strips over, and then flannel to keep in all the warmth possible. Spongio piline damped with warm water to the stomach and bowels when not fomenting; once a day dry rub the legs by two persons. The swelling in the trunk was reduced nearly to the natural size, the appetite returned, and she enjoyed her light dinner on the day she died, which was upwards of three weeks from the time she came. Her departure was without pain, and in perfect assurance of the salvation of her immortal soul. She called for some of her former companions to see and hear what religion could do for the dying. The heart having been irretrievably diseased, there was from the first no hope of restoration; but it is no little advantage of our system to give ease of body without clouding the mind with opiates—the only resource of the doctor to relieve dying agonies. Several similar cases in advanced life have been similarly relieved.

The editor of a northern newspaper, about thirty-five years of age, came to me this summer, with dropsical flesh, flabby, and so pasty, that I could imprint my finger almost in any part of his person. His medical attendant said he had done all he could for him, and he then (as is usual with the majority of our cases when physic, blisters, setons, &c., have been tried to restore vitality and failed,) came to my establishment, and was much surprised and pleased to hear me say his recovery was certain, if he would give me time and obey my directions strictly. I began with gentle fomentations to the stomach and bowels, with tepid dripping sheet after, also hot and cold sheets; gentle vapour five minutes, followed by shallow 70 degrees; dry rubbing all over by two men, sometimes with, and sometimes without a little dry mustard; then without washing replace wet body and leg bandages—sometimes steamed the legs only; 80 degrees sitz baths fifteen minutes, and one cold—watching the strength, and only giving as much treatment in one day as his low powers could bear. Three to four tumblers of water per day by

sips,—wet body bandages night and day, spongio piline at first, as he could not warm a calico one—when he could do so, substituted calico, which brings out crisis quicker. After three weeks he was covered with crisis, which discharged freely, and on his legs and ankles to such an extent, that it ran into his shoes. He was in a pitiable state, and despaired of recovery. I told him I had not the least concern for him, or doubt of his entire restoration from the first, having perfect confidence in our appeal to nature by such natural means. He has long returned to his duties, and has written to me this week, saying he is in perfect health, and has stood the fatigues of a contested election without any inconvenience.

Often the legs are swelled merely from weakness. We see to renovating the stomach and getting good functionary action of the liver, &c. Pack the legs as usual night and day,—steam them once or twice per day, and pour tepid water over them, and dry well with towel, then dry rub with hand for five or ten minutes, and replace packings. Every other day a leg bath to knees in mustard and water 105 degrees, then wipe with towel wrung out of cold water, then dry rub with towel and hand stroking downwards always in these cases; little flesh meat our usual diet, no stimulants of course. The more we see the invariable response nature makes to these natural appeals, the more confidence we have in our plans. There is nothing punishing—nothing in the treatment the body shrinks from.

**LEUCORRHEA or WHITES.**—This prevalent and most enfeebling disease may be cured by the following plans being strictly and perseveringly adhered to, requiring so little trouble and time in their operations. The running sitz is the best for this purpose, but a large earthenware or tin pan or tub may be substituted. Put in about two quarts of cold water, and without undressing, sit down in it for two minutes only, and repeat this every two hours or as often as convenient. Less frequently will do when the case is not a severe one. This simple treatment will also effectually check and cure excessive menstruation or flooding, and may be used without fear when it is on.

**PREGNANCY.**—The best treatment for the general health at this time is to have, on rising, a shallow bath from 86 degrees to cold, according to the strength of the patient. Sitz bath from three to ten

minutes two or three times during the day also, varying from 86 degrees to cold, to suit the feelings; and a quick sponging over the whole body at bedtime. Also wear the body bandage regularly, or as much as can be done comfortably, being always careful to renew it with fresh water several times a day.

If from delicacy of constitution the whole of this treatment cannot be taken, then adopt part; and cold wet rubbing with the hands, as mentioned in Nervous or Cold Feet cases, will be very advantageous and refreshing. Also apply cold cloths to thighs for five minutes at a time, putting dry flannel over them. Oftentimes packing the thighs with strips of calico, macintosh, and flannel, would be found very useful where there was great heat in the region of the womb; but a great deal depends through the whole of pregnancy upon the person taking great care of *diet*, taking water as the *only* liquid, and brown bread, vegetables, farinaceous puddings, and milk, for the principal food.

#### CASE OF DEATH FROM ULCERATION OF THE BOWELS.

A gentleman, aged 28, apparently of regular moderate habits, but taking his daily allowance of wine and spirits, came to me complaining of frequent diarrhœa and weakness in the bowels, for four or five years past. I soon discovered from the state of his tongue, and other symptoms, that he had been gradually accumulating inflammatory action of the mucous membrane lining of the stomach and bowels, and I told him he had no time to lose in having proper remedies applied, and of a different nature from the physic he had so long tried in vain, and which, he said, had never given him but temporary relief.

I advised him to think nothing of his business, and give himself up to the treatment for a considerable time. After five weeks' stay he was so far restored, that he considered himself well enough to return home. I, however, advised him not to do so, although he was a new man in comparison with what he was when he first came to the Establishment; the bowels were quite regular, and no pain, and his tongue all but clear. He did return home: but although I had impressed upon him the absolute necessity (if he valued his life,) to strictly abstain from all intoxicating liquors, and to diet himself, and to use the baths prescribed, yet he did not entirely comply, and it was the cause of his death, about eight months after, at his own residence.

Not a few I can remember who have acted in a similar manner,



against my most urgent advice, while I have pointed to such fatal transgressions of the conditions not only of health but of life, and in more cases than this have they expressed their regret that they did not follow my advice when it was too late to do so.

When there has been a long state of deranged health, and more especially disease, a sound cure and power to resist the effects of the ordinary wear and tear of life is not reasonably to be expected by even a few months' treatment, and after apparent convalescence. The frame must have time to be thoroughly renewed in a natural way; and this is why many will not try hydropathic treatment. The doctor's patching and pabulums—his sedatives, and tonics, and purgatives—his leeches and lancet—his setons, and issues, and blisters, and counter-irritant ointments—his cupping, and final issues—are all to be had so handy, and without trouble; and often, too, with the pleasant company of a gentlemanly intelligent man, who knows a good deal of what is passing in society and in the world. He calls upon them for little self-denial, because he knows it is useless to offer such advice, or to make recovery a condition of obeying it. Added to all these conveniencies, the probability is, that they have a gentleman to deal with whose honour or sincerity no one can doubt, however they may differ with him as to mode of practice: for it is notorious that in no other profession do we see more or such an amount of services done gratuitously, and without any hope or chance of payment. Our country surgeons range over our hilly county many a dreary night, knowing there is small chance of pecuniary remuneration, nor do they ever refuse to go on that account. Mankind, it is to be hoped, will in time be wiser than to sacrifice life for business or conveniencies.

Not having heard of my patient, referred to above, for some months, I made enquiry, and found he was not expected to live many days. I immediately sent off an experienced bath-man to his residence, one hundred miles off. He found his old complaint upon him, and greatly aggravated. He had been so far renovated by his visit to my place, that he stood his labours well for some time after his return: but the departure from the strict regimen, and taking stimulants, and over working the brain, began by degrees to bring on the irritation in his bowels, when thinking he was not yet much amiss, he had recourse to

physic; and now the course of the disease was rapid, and his doctor told him there was no hope of life.

The patient had some of our apparatus which he took with him from my establishment. My bathman began with gentle fomentation to the bowels, then towel pack, the towel wrung out of warm water; and after the pack, sponge over with tepid water, soaping first. The throat packed night and day, as his mouth and throat were so ulcerated that he could with difficulty swallow liquids. When feverish or restless the operations were repeated, and having a napkin wrung out of warm water almost constantly over the stomach and bowels (spungio sprinkled with warm water would have been better, as it would not have required renewing often). A tepid sitting bath was given, but he was so low that it could not be repeated.

No urine had been passed for several days until these applications, when he passed it freely, and was greatly relieved. The relief to the mouth and throat by the throat pack was also complete. The poor invalid was before choking with the burning fever there. He could soon swallow easily, and began to take some mucilaginous food, and rallied much; he took milk thickened with ground rice and flour during the nights. Free from pain, and, comparatively, from fever, he could calmly consider his nearness to the bourne, which once crossed, is never re-crossed to the business of life; and he was grateful to God for the season of reprieve and of ease, which he used with great profit and comfort to his soul's welfare. His life was prolonged by these means five weeks, when he departed, as he had been from the first applications, without pain. He had all day looked forward to six o'clock p.m. as the hour of his departure, and a few minutes after the clock struck he breathed his last to join the great meeting he said he had to attend at that hour, adding another warning to those left behind not to make business or the customs of the world a greater consideration than God's immutable laws for the comfort, efficiency, and existence of the body.

The following letter I received about a week after:—

“ Banbury, December 7, 1857.

“ Dear Sir,—Having been an eye witness of the beneficial effects of the Water Cure in Mr. . . . case, in this town, it seems right, to communicate to you what I saw. The judicious way in which

your Mr. Frost treated Mr. . . .—applying the water so variously and skilfully—that under God his life was prolonged for a much longer period than otherwise. Had Mr. R. been allopathically treated, I believe that there cannot be a doubt but that, humanly speaking, his death would have occurred long before. Not only was life prolonged, but from the soothing effects of the water applications, he had not the least pain or suffering. Violent dysentery, and a deeply ulcerated alimentary canal, were calculated doubtless to give much torture and distress, yet not the least symptom appeared.

Your obedient Servant,

“ J. Smedley, Esq., Lea, Matlock. —————.”

The use of tobacco being so often the cause of Ulceration of the Bowels, the following remarks by the late Dr. Hall, may, I think, be inserted with advantage.

THE LATE DR. MARSHALL HALL, ON THE TOBACCO QUESTION.—(*From the “Lancet,” of October, 1857.*)—A NOTE ON THE EFFECTS OF TOBACCO.—When I first occupied my present lodgings, I was struck with the almost constant appearance of a young man, obviously of fortune or independence, who walked up and down on the opposite side of the road, half way between my window and the sea. He was tall, robustly made, but stooped, and his whole gait and appearance were slow, slouching, and inanimate. I could not imagine what should induce a fine young man so to occupy himself, or rather to pass hour after hour sauntering up and down without occupation. At length the mystery was solved. I observed, what I had not discovered at first, that the youth *had* an occupation; between his hand and his lips he constantly held a *pipe*. He thus therefore spent his time dreamily away, without energy, without object, in a state of constant half narcotism. I have known members of my own profession so to devote themselves to this narcotic, as utterly to lose the energies requisite for activity in study and practice, and consequently for success:—a room, a dress devoted to the purpose of smoking, hours spent in the indulgence of the solitary vice; half narcotism, half anæsthesia. I would not boast, but I think I may affirm, without boasting, that I have *laboured* in the cause of medical science, during two-fifths of a century, more than any one. This journal bears testimony to these labours,

and with whatever success they may have been crowned, I am firmly convinced that I never should have accomplished them had I been a smoker—had I absented myself from society, and shut myself up in a peculiar room and in a peculiar dress, the impersonation of *self*, solitude, and oblivion. I write this for the warning of my younger professional brethren. It is plain tobacco acts on the cerebrum, the medulla oblongata, and the heart; its effects are stupidity, defective breathing, defective action of the heart—forms of debility and impaired energy. These phenomena are primarily physical, and physiological; no doubt the blood is poisoned, and in its turn poisons the brain, the medulla, and the heart. Sometimes, in those who smoke for the first time, these symptoms occur in a form even of danger. Such a case occurred to me many years ago, and was published in the *Edinburgh Medical and Surgical Journal* (in 1816). Of this case I propose to adduce a brief extract:—

“Mr. J. H., aged nineteen, unaccustomed, except for a day or two before, to the effects of tobacco, smoked one and a part of a second pipe. He became affected by violent syncope, and by violent retching and vomiting. He returned home, complained of pain in the head, undressed himself, and went to bed. Soon afterwards he was taken with stupor and laborious breathing. He was found in that state by the medical attendant. The countenance was suffused with a deep livid colour; the eyes lost their brilliancy; the conjunctivæ were injected; the right pupil was exceedingly contracted; the left was much larger than usual, and had lost its circular form; both were unaffected on the approach of light. The hands were joined, and in a state of rigid contraction; the arms bound over the chest; and the whole body was affected with spasmodic contractions; the breathing was very stertorous.”

From these several symptoms we may pretty accurately judge of what is going on in the brain, in solitary smokers, and in a minor degree in all smokers. The robust may support the effects of tobacco; but the feeble will assuredly pay the penalty of languor, inertia, and incapacity. I have known more than one instance of members of our profession both in its higher and lower ranks, making shipwreck of their success and fortune, by addiction to solitary and sedentary smoking.

*Brighton, April, 1857.*

Experience has fully convinced me that Total Abstinence from ale, wine, spirits, or any stimulating liquids is absolutely necessary in all



eases if health is to be restored or preserved. I find by drinking water only I have enjoyed a freedom from headache and a buoyancy of spirits I never enjoyed whilst taking any stimulating beverage, and I also find my strength increased, and that I can take a greater variety of food without inconvenience. I strongly recommend a trial of the same plan 'to any and every one.

**HYDROPATHIC APPLICATION IN EXTREME WEAKNESS, AND TO THE DYING.**—I shall not forget calling upon a late dear friend, a lady nearly eighty years of age, who was dying from natural exhaustion of the whole frame. Her sufferings were great, simply from the stomach, liver and bowels being worn out. The vitality and power of action all but gone. Naturally of a healthy constitution, life lingered in the body while there was but a spark to keep the heart moving. On the top of the chest of drawers in the room, was a whole row of physic bottles. The doctor, kind and attentive, and celebrated for his skill, had done his utmost to give relief, but was entirely unsuccessful; even morphia, and the most approved sedatives, failed in the usual effect they produced in the earlier stage of the illness. The stomach had lost its heat and vital power to assimilate and dispose of its contents any longer.

I advised gentle fomentation at once to the back and front of the body, with one wrung out flannel pad, covering it over with light piece of macintosh to keep in the heat, as the can might be too heavy. This gave immediate relief, and after it had been on twenty minutes, it was taken off, and with as little disturbance of the body as possible. Wipe the part with a napkin wrung out of warm water, then, with a soft dry napkin, gently wipe dry, and have a broad, dry, warm flannel bandage to put round. Whenever the pain returned, have a piece of iron plate made hot, or half fomenting can, wrapped in flannel, put over the stomach and bowels, and if necessary foment again, but only on the stomach, as care must be observed not to fatigue the body more than possible; the legs and feet wrapped in hot mustard cloths, and dry over, as long as they can keep warm, will be of great service, and then wrap them in dry flannel afterwards. Water is by far the best beverage in these cases, and that all but cold; it should stand in the room a few hours.

By these gentle means of keeping warmth over the stomach and

bowels, nature will be assisted to the last. Discard all physic whatever. If the bowels should be swollen or uncomfortable, and constipated for days, then a gentle warm water enema. A large piece of spongio piline, sprinkled with a little hot water, and bound over the stomach and bowels, and kept on with flannel wrapper, or tied on with tape, will keep in the vitality, and do great service. Castor oil, which is generally considered a simple and harmless medicine, Dr. Quain in his work on the rectum, says, is irritating from its acrid properties, and he cautions against the use of it.

Shortly after I attended the case I name, a near relative of mine, a lady, nearly eighty years of age, lay in a similar state and her gratitude to God for the relief afforded by these natural harmless means, I shall never forget. I have witnessed the same effect on young persons dying. It is simply keeping the vitality up by artificial warmth, when the body no longer possesses it naturally, or can bear stimulating internally.

**A SIMPLE BATH FOR NERVOUS CASES,** or for cold hands and feet.—Take the coldest water you can, and then another person strongly rub with hand and cold water the soles of the feet and palms of the hands, separately, for three minutes each, then rub them with dry hand till warm.

**DEAFNESS.**—We have succeeded in curing or greatly relieving cases where the deafness has resulted from temporary weakness of the nerves, or the secretory and excretory functions of the eustachian tubes have been unable to perform their office. The generally invigorating effects of the baths, diet, &c., aided by the following simple plan, has been the course pursued. The following slight treatment has first been adopted in cases where we had reason to believe the deafness proceeded from nervous debility, and after a time the more general stimulating treatment of cold dripping sheets, &c., was adopted. Use the head bath with cold or tepid water, first putting the back of the head in for fifteen minutes; then put each side of the head in water for fifteen minutes; repeat this twice a day,—also thrice a day rub the body all over with a cold wet cloth; this will do morning and night. At bedtime well pack the ears by covering them over with either wet linen or wet spongio piline, and plenty of flannel outside. Drink four or five tumblers of cold water per day.

**TOOTHACHE.**—If teeth decayed, extraction is the only cure, but if

only rheumatism, hold tepid water in the mouth until it begins to grow warm, then change it ; at the same time the face, cheeks, neck, and parts behind the ears, should be rubbed vigorously with the hands and cold water, frequently dipping the hands into cold water. It is well also to rub the gums till they bleed. Cold foot baths and hand baths will also be found useful. Pack the face also with wet and dry calico, and plenty of flannel ; but it is only wasting time to try any other plan than extraction if there is decay in the tooth, as the pain keeps up an irritation of the whole nervous system to the great injury of the health ; serious and protracted illness we have often seen result from not having resolution to have the tooth or teeth extracted at once.

**HOT WATER SITZ.**—This, for many cases, is most useful. The cases in which we do not recommend it are piles, heart affection, full habit, determination of blood to the head, or spinal affections. In cases of sudden attack of cold at the chest, or of the lungs, or asthma, stomach complaint, cramp, &c., it is highly useful. Have the water 100 degrees, or more if it can be borne, sit in the bath with the feet out and in hot water, or on a hot pad. Have a fomenting pad dipped in the hot water, spread over the throat, chest, and bowels. Keep the arms down in the water by the sides of the body, and throw a blanket over the person, except the head. The hot pad will be found most grateful to the chest and bowels. Remain in ten or fifteen minutes, but not so long if perspiration is excessive, then have a tepid or cold wash, and put on chest compress and body bandage, wetted as usual. The hot sitz will be found a very agreeable and beneficial bath for any one in health, especially in winter, or in case of a chill or cold. I frequently use it on winter mornings, and take a cold dripping sheet after.

**CASE OF BLINDNESS.**—A gentlemen residing in London, about forty years of age, came to our establishment to ask if, in my opinion, hydropathic treatment could do anything for the restoration of his eyesight. He had for some years suffered from inflammation in the eyes, and his sight gradually became weaker, though he had observed the strictest attention to the advice of surgeons, physicians, and oculists he had consulted. He had hesitated at no expense nor self-denial, but all ended in disappointment ; and indeed the result was a worse calamity than weakness of sight,—for the last surgeon he was under in London ordered a blister to be applied entirely over the fore-

head, with the intention of drawing out the inflammation, and as soon as this blister *rose well*, he became totally blind. It was the last outrage nature could submit to: the blister drew away the life of the nerves, never more to be restored. He has been ever since hopelessly blind. I could do nothing for him but invigorate his general health, which became excellent, and if this treatment had been applied earlier, I have little doubt but his sight would have been good. He had been suffering for many years from acidity, and consequent inflammatory action of the mucous membrane of the stomach, liver, and bowels; and the eyes were, as a matter of course, affected. The doctors applied their nostrums to the head, cupping, often blistering behind the ears and at top of spine, and salivating, until the last eminent practitioner thinking he would try the front part of the head, and carry his attack on the inflammation nearer the centre of mischief, gave him a *coup de grace* and received his fee! Being a certificated practitioner, and using the lawfully authorised rules of warfare against disease, he came off not only without blame, but with, no doubt, the satisfaction to himself of having tried every orthodox plan in his power. When will the College of Physicians throw aside the dogmatical London Pharmacopœia and the Materia Medica, by which all surgeons admitted to practice must swear by? These codes of cure of disease have been laid down generations back, and are known by the profession to be fallacious in many points, still the mixtures and the application to disease must be acknowledged, notwithstanding the absurdity of laying down laws for all present and future times, ignoring all progress in scientific knowledge of the human frame in its requirements in disease.

When will mankind shake off the superstitious regard they have for old established usages and think for themselves, and compare the practice and principles of not only surgeons and M.D.'s, but of other professionals who are educated with an idea that they possess a right by virtue of their diplomas or orders to assume an infallible authority over their fellow creatures? This poor gentleman, from overstudying, weakened and deranged his general health, his *vis vitæ* drawn constantly to the brain to keep up the stimulus there for study, the nutritive process was in part stopped; the optic nerves in common with every other part of the body were decaying, and not being replaced, until attenuation amounted to that degree, that they were incapable of conveying the sense



of sight from the nervous centres in the base of the brain. All the nervous system sympathised, and when on examination of the patient's habits of life, the doctor could easily see a cause for the ailment, why did he not look to restoring the nutritive powers, instead of prescribing a directly opposite course, draining the life further out? The patient has been a man of most strict moral habits all his life, and guilty of no excess. Stimulants and good living were ordered by one,—abstinence by another: then this was condemned by a third, and so on; it was all striking in the dark, until the poor gentleman's readings were put an end to by total blindness.

**CASE OF OVER-WORKED BRAIN** ruined by the remedies applied.

A medical student of King's College, about twenty-four years of age, studying hard, paying little attention to his health, smoking cigars to soothe his nerves, and taking stimulants, (but by no means more than is usually taken) to keep up his spirits. The natural result followed—congestion in the head and general uneasiness. He applied to the late celebrated Dr. Lawrence, who according to the orthodox laws of the profession, attacked the suffering part with blisters behind the ears, cupping at the top of the spine, and salivation by way of cleansing the blood and clearing the bowels; no doubt thinking when he had drawn out serum and blood from the head, and made a good passage below, the whole machine would be as clear as a new copper vessel, and ready for anything the patient chose to put into it again. The unfortunate result however to the student (who is now in practice as a surgeon) is, that he has been losing his sight ever since the blisters drew the life out, and if he is called to any patient in haste, he is subject to a swimming in the head that incapacitates him for immediate action. He is full of rheumatic pains, and sometimes feels difficulty in using his limbs, and a premature old age has been inflicted upon him by one of the most celebrated in his own profession. He will never regain the vitality which has been drawn out of him. He is now convinced of the soundness of the principle in looking alone to the restoration of the powers of nutrition to cure disease, and only attempting the cure of a local part through the agency of the whole system. He has experienced much benefit from a partial adoption of our hydropathic plans.

I was struck with a remark he made shortly after he had tried our

practice, and read Dr. Gally's work. "You begin," he said, "with building up, we unfortunately have to begin with pulling down before we can attempt building up." I remarked, when once this pulling down is practised, the frame rarely, if ever, entirely recovers the mischievous effects.

**CONGESTION OF BRAIN AND PERMANENT INJURY,** *from irregular living, drinking, seton top of spine, &c.*—A gentleman, age about fifty, naturally remarkably strong and robust, having had perfect health up to forty years of age, began then to feel the effects of irregular living, late hours, tobacco, wine, and spirits. Being very prosperous in his business, and a man of great energy, his naturally strong vital force kept him from feeling the extent of the mischief that was brewing. He went to the doctor when his head was a little worse than usual, or his bowels confined,—got a dose of calomel and proceeded on the course of ruination to his body. Nature bore this as long as she could, and then set both the patient's vital force and the doctor's pabulums at defiance, and the patient was laid up with racking head-ache, sleeplessness, and miserable nervous feelings, amounting almost to madness. A rather strong measure was now tried; a kind of combined assault on the vitality of the system, in the shape of blisters behind the ears, salivation, and an issue of three peas at the top of the spine!! Nature never recovered this blow, nor will she as long as the patient lives: a permanent and incurable uneasy feeling has been set up in the nerves of the head, which nothing can ever cure. The vitality of some of the nerves in the spine and head are all but destroyed, and so weakened, that at the patient's time of life (fifty) restoration is entirely hopeless. If surgeons or physicians ever cured congestion of the brain by these barbarous applications, there would be some justification for the practice, but they never did, and never will so long as the principles of the life of the nervous system are, what they themselves have discovered, and published to the world in so many instructive and truthful treatises.

This patient came to my establishment most unwilling to have the peas taken out of his neck; he had been told that by drawing away inflammation they were his security against insanity. I told him I gave lamb and chickens with the peas I prescribed, and I should order them to be put into his stomach, where they would be far more likely to help to restore the nutritive powers of the body than being stuck in

the back of his neck, producing stinking matter. The peas were immediately removed, and the hole cleansed and healed up with water bandages. I had this patient several months, got his bowels soon to act quite naturally, and the kidneys also; the tongue clean, appetite good, could stand any amount of cold baths with pleasure, could walk ten miles at a stretch with ease; all was right but the occasional twitching at the back of the head, where the peas had been stuck in, with an almost constant sense that something was wrong there, and on exertion communicating to the head a sort of dull heavy feeling, although far more slight than formerly, but not preventing sleep. It is, in fact, simple weakness of the nerves from the injury. The good state of tongue, and the general good health shows the cure would have been complete but for the barbarous invention of the peas, and I expressed my wish that the surgeon had tried the effect of the treatment upon himself before he prescribed it to his patient, the same as I try my baths and bandages to find out by personal experience their agreeable or disagreeable effects.

**WOUNDS, CUTS, AND BRUISES.**—If in a part that can be immersed in hot water, immediately do so for twenty minutes, and let the water be as hot as can be borne. If a cut, strap the lips of the wound together with narrow strips of diaculum plaster, then put on a piece of spongio damped with hot water, or if no spongio at hand, use thicknesses of linen, with macintosh or oiled silk over to keep in the warmth. When painful dip the part in hot water *without taking off the wrapping*. This is important; we never undress the wound till there is exudation, and the morbid matter gives out effluvia, then have it redressed altogether as above, and repeat the treatment if needed; it is seldom that more than two dressings are required. The spongio or linen will not grow into the wound if the part is immersed in hot water two or three times a day, or even less. If the wound is severe, and inflammation comes on in the limb, wet pack the whole limb, as at page 45, and re-wet the bandages three times a day. This will stop inflammatory action. Should the wound be in a part of the body which cannot be separately immersed, apply hot fomenting pads, and this treatment as far as it can be done. If the cut is serious, or inflammatory action sets in, it is absolutely necessary to abstain from flesh meat, ale, wine, spirits,

coffee, or any kind of stimulants, and, indeed, at all times if sound health is to be enjoyed. Wear the wet body bandage, use dripping sheets, &c., to open the pores and invigorate the system. We have had some desperate cases where amputation had been declared necessary, which have very soon been cured by these simple means. In cases where the forepart of the finger has been torn or cut off to all but a shred, it has been replaced, and the finger made whole.

**CASE OF CUT IN THE HAND, AND PROPOSED AMPUTATION.**—A patient applied to us in much distress of mind and body at the prospect of a surgical operation on his hand. He had several weeks before accidentally cut his hand, and one finger severely, with a rusty turnip chopper. He sent for his surgeon, the hand was dressed, and an attempt made to cure it. The usual routine of surgical treatment was applied; ointments, cooling lotions, and calomel to stimulate the liver and to cleanse the bowels. The finger, however, as the patient remarked, took bad ways; the inflammation and pain became so intense that he could not sleep, and had not retired to rest for nearly a week, and had he not, at a friend's suggestion, wet packed the arm, the erysipelas which had set in would have destroyed him very soon. A longer and deeper incision was now made in the finger, laying it open to the bone to allow the matter to come out. This gave no relief, the place soon showed signs of bad matter and more inflammation; it would not heal nor give any appearance of healthy granulations forming. The surgeon said he could not hesitate longer to call in further assistance, and with another surgeon in extensive practice they again examined the finger, and came to the conclusion that amputation would alone save his life. The instruments were produced, but the patient's courage failed,—he declined to submit to it, and applied to us. Now it was evident on a glance at the subject why these really skilful surgeons had failed to cure the finger without an operation, which, even if performed, would have left the patient in the same critical position. The state of the whole system was thoroughly deranged; tongue foul, complexion yellow, bowels in an unnatural state, head bad, and nausea, all shewing the blood utterly unfit to repair damages in the frame. This impure inflammatory blood kept up especial irritation and inflammation in the wounded part. The bowels and finger had been attended to, good living and stimulants advised, but this of course only added fuel to the fire. The hand, as in



the case of the burn quoted below, was a secondary object with us, and not thought of as the point to cure. It was first immersed in water daily as hot as could be borne twenty minutes, then, while in the water, the morbid core of the wound was raised with a pair of fine pincers and cut off as it could be borne. The pain was severe. Soon as this operation was over the whole hand was packed in spongio piline, and the arm to the shoulder wet packed with calico, macintosh, and flannel. This was repeated only once a day except in case it was painful, when the hot water was re-applied and the packing replaced, but this was seldom required, for the arm was at once relieved, and he went to bed and rested the first night. But this was not altogether owing to the treatment of the hand and arm, he had before every dressing a hot shallow and tepid wash down, or a steamer, or a wet pack. The wet body bandage night and day; all stimulants, flesh meat, or tea strictly forbidden. Light puddings, bread and butter and water, or weak cocoa.

The patient was not confined to his house three days after this treatment, and soon got well. The hand was cured with the exception of a stiff joint caused by the application of the knife to the tendons.

**CASE OF BURN.**—A workman in my employ was foolishly melting some bees' wax in turpentine in a tin vessel over the fire, the mixture burst into a flame, and in attempting to remove it, the handle broke off the pan, and the whole contents,—a mass of liquid fire, ran over on to his hand. The skin was completely charred over the whole hand, inside and out. The surgeon was immediately called in. The messenger having informed him of the nature of the accident he brought with him a sedative draught, and administered it at once, saying it would compose the sufferer and give him sleep. He examined the hand and applied some ointment with a feather, and a covering of linen, then a poultice, and covered the whole up. The sedative draught was repeated several times during the night, and the patient had, according to his own statement, several "dosing bouts," but awoke with alternate fits of heat and shivering. The surgeon was very attentive, came several times during the day and redressed the wound, and repeated this the following day; at the same time expressed his fear of mortification and consequent necessity for amputation. The accident occurred on Thursday evening, and the surgeon attended until Sunday evening. I only heard of the accident on Monday morning, and the surgeon's opinion

that there was but slight hope of saving the hand. I immediately sent a close carriage for the patient to our free hospital, taking all the risk without hesitation and with his entire consent. Soon as he arrived the bandages and poultices were removed, the ointment carefully washed off by sponging, squeezing the warm water over without touching the parts with the sponge. A tea kettle full of boiling water was thus used; there was no feeling in the hand, the skin was charred, stiff, and cracked, the fingers all in a fast mass. When the hot water was being poured on, the fingers began to twitch, to the great joy of the man; next steamed the hand and arm twenty minutes. It was remarkable to see some of the turpentine coming out which had been kept in by the doctor's ointment, and of course a source of great irritation. After steaming, packed the hand and arm with wet linen and dry flannel and shawls, and now the hand was soothed, and the irritating matter removed. he rested three hours. The next and principal point to see to, was to raise the vis vitæ or power of life; the nervous system had received a severe shock, deranging the digestive organs, making the man sick and faint. After the dressing he was undressed except the arm, and put into our steam box, and a gentle steamer given; the effects of this revived the whole frame, and was most grateful to the distracted nerves. After the vapour a tepid dripping sheet, then well dried with a sheet in preference to wash down, to prevent exposure to the air, then wet body bandage and dress. The patient got sound sleep the same night without any physic or artificial means; the soothing treatment was very effective in giving immediate relief.

The next day the hand was steamed three times and re-packed. The man could not stand without help when he came, but this day he walked out alone, and had a wet pack of all the body, in which he went to sleep. The third day the skin was partially ready for removal, it was white, sodden and soft, and was cut away entirely day by day, until it was all removed, and left the new skin forming underneath. Offensive matter dropped out as the burnt skin was removed, and with it some remains of bees' wax and turpentine. The fingers were now set entirely at liberty. General treatment was continued to improve the general health and keep the body cool; the body bandage wetted often night and day kept the bowels right, with a 70 degrees sitz bath ten minutes twice a day. A glove of spongio piline was now made with fingers to fit each to keep

them separate, this was kept on and damped night and day, except when removed to steam the arm three times per day. The arm kept packed with wet and dry calico and macintosh. A whole vapour bath and tepid sheet was given every morning before breakfast. There was not the least relapse; in fact the man returned home in a fortnight cured, but the tender new skin would not allow him yet to work. The hand if at all cold would contract and be fast again; this, however, disappeared as more life got into the part. The steaming the arm in this state was as strong as he could possibly bear. Pieces of whalebone were fitted over the glove on the inside of the hand to keep it open and prevent contraction for about a fortnight. The man got to his manual labour in two months, and has now the perfect use of his hand, and there is no scar whatever left.

This again is only being a nurse to nature, not forcing her or dictating to her by unnatural operations. No stimulants were allowed, nor a grain of medicine.

**OLD INJURIES OR WOUNDS FROM BROKEN OR DISLOCATED LIMBS, OR HUMOURS.**—The effect of the Hydropathic treatment in restoring parts which have been formerly injured, is very striking, and shews the sound principles on which it is based. It is an ordinarily admitted axiom in the medical profession, that the quicker the tissue of the body is replaced, the more healthy and vigorous it will be, and that the new healthy tissue thus formed, will not bear the presence of effete or morbid matter, but will quickly expel it. We have had a number of striking cases of this description. In the case of a lady, whose arm had been broken eight years before, and which had been weak ever since, although apparently restored, a crisis came out after a week's bathing on the very part where the fracture had occurred. This crisis discharged, then threw off scaly eruption, got well, and the arm was restored to its normal vigour. At the same time, as a matter of course, and, in fact, the cause of the restoration of the arm, the whole frame was invigorated.

Another case of a gentleman with sprain of the ankle joint of years' standing, and which as usual had been treated as a local ailment, was bearable and useable, and therefore left to be cured by time, as the heating lotions and blisters did not appear to strengthen it. In a few

weeks after he had adopted our treatment for his general health, his ankle became swollen and inflamed, and then began to suppurate; his appetite improved, and his spirits raised, with a new feeling of comfort in all his frame, except the suffering part under process of renewal. This cheered him and gave him confidence until his restoration was completed. This is natural cure; not the effect of science, but simply studying and following nature's laws in keeping the pores of the skin open, cleansed, and healthily stimulating the suffering member by artificial warmth, cleansing away the morbid matter as it exudes, so as not to allow it to be offensive to the new granulations forming; attention to plain simple food, good air and good water, following nature's hints, not forcing her to submit to man's ideas of what the results of his pharmacopœia and materia medica practice ought to produce. No, nature will not be dictated to; she has secrets in her laboratories (the glands, &c.) where she forms the delicate compounds man cannot imitate. He is sure to put in too much of one thing or other, or not the right material at all. He tries by mixing up tonics and purgatives, sedatives and stimulants, to hit the mark, but always fails in giving nutrition with the nasty stuff he administers. Our eustard puddings, roast beef, and forest mutton, distance the utmost stretch of his genius, with the London Pharmacopœia and Materia Medica to boot.

The advantage of a proper use of Hydropathic treatment has the same effect in other parts of the frame, except where vital injuries have been sustained by bleeding, setons, physis, &c., and even in these cases a great deal can be done to prolong life and make it more comfortable, and the body more efficient; this is a great boon to the sufferer. By the other principle of practice, there is no chance of a radical cure being effected. I could give a large number of cases of injuries being thus cured or relieved, and I have always such cases in my establishment. An elderly gentleman, a member of the society of friends, recently returned home cured. He came to my establishment some months ago quite broken down, the lower part of the legs dark and inflamed, and an issue set, in which exuded offensive matter to such a degree, that he was offensive to himself, and it banished him from the social meetings of his friends. The doctors told him the offensive matter was the safety valve for the preservation of his life, and if stopped, he would be in danger of death. And believing the doctors' prophecies



true as to the painful effects of the discharge ceasing, he made up his mind to have his legs discharging stinking matter for the rest of his life. When I told him the discharge would not only be stopped, but his health would be renewed, and the legs made whole and fit for company with any healthy legs, he was incredulous. "No, friend," said he, "I know thy good will, but if these holes are stopped, the consequence may be serious." I said, if you keep a tap in the cask constantly dripping, the vitality of the body will go out too; we do not turn out such bungling work. Wait and see the effect of our water, our air, our puddings, our lamb and peas, our chickens and rabbits, our stewed fruits, and plenty of cream and new milk, our pure brown and white bread, and the cheerful happy sympathising society. He did wait; he gave me his confidence and was made whole, and his life, I have no doubt, will be lengthened twenty years.

So many cases come to my recollection, that it is impossible to spare time or space to record them, but if any reader wishes to prove the truth of my statements, I will give them references to the cases, who will, I am sure, gladly testify to the blessing God gave to the treatment used. I have had physicians and surgeons as patients at my establishment, or rather have come to nurse their natural powers to rid them of serious ailments, and they have one and all expressed their perfect approval of the simple natural means used, and have in all cases received important benefit. One surgeon who came is the head of one of the largest dispensaries in England; he was accompanied by his friend, a D.C.L., who is now my intimate friend. But seriously and impartially looking at the effects of the ordinary medical treatment of such cases, how can the medical profession support their boasted claims to exclusive and infallible knowledge of disease and its cure, when they leave offensive wounds not only uncured, but tell the patient it is a necessary condition of their existence.

**ABSCESSSES.**—First wash with common yellow soap and water, and if in a part where steam can be applied, let it be steamed for twenty minutes: if not, foment with hot water for the same time, but neither steaming nor fomentation very hot; if too hot it will irritate rather than soothe. Then apply lint or linen folded two or three thicknesses, well soaked in warm water, and put on as wet as will not drip, and oiled silk or macintosh sufficiently large to cover it, with a flannel bandage loosely

over all, not tight. Whenever painful, or much matter exudes, frequently replace wet linen. Keep it from the air as much as possible; steaming three times a day. As abscess is only the result of some constitutional disturbance, treatment to renovate the general health should be applied at the same time, with the plain diet recommended in this book, and no stimulants. I have seen abscesses forming in the glands of the neck and elsewhere, absorbed and prevented from coming to a head simply by wearing damped spongio piline and a few fomentations, not very hot, and attention to diet and baths.

**POULTICES.**—(*J. Shew, M.D.*)—"Some surgeons now profess to use water-dressing as a substitute for poultice. *The two are very different in their effects.* A poultice is made of materials, which, in a term far short of its renewal, become sour, and thereby renders the poultice, after the first few hours, an irritating application. The greasy substances which are added to prevent the poultice adhering to the skin, do not always answer the end, and soon become rancid. A poultice favours the formation of pus, and causes a throbbing or pulsating pain, and a feeling of tenderness in the part, which are the natural attendants on the process of suppuration. It imbibes the pus it serves to create, and thereby becomes more irritating. A poultice, before it is many hours on, is a mixture of sour farinaceous substance, rancid oil, and pus, oppressing the part by its weight, and beginning to adhere round its edges to the skin, creating the sense of constriction.

"In order to judge of the effects of poultices, it is only necessary to visit a hospital, where they are much employed, before the surgeon comes round, when the sufferings of the patients will be sufficiently obvious; and to contrast this state of feeling with that which arises after the poultices are taken off, and the wounds and ulcers bathed for some time with tepid water; the soothing and comforting effect of which is better known by the patients than the surgeon, and therefore they prolong it as much as they can.

"Water dressing has not only better, but very different effects from poultices; it either prevents or diminishes the secretion of pus: a wound may at first yield a little purulent fluid, but in a short time this will be furnished in so small a quantity, as hardly to stain the lint. The pus, even from an ulcer, rapidly diminishes under water-dressing. I remember a case of a very extensive ulcer of the leg, to which I applied

it; the patient pulled off the dressing in the night, because, as he said, "it was stopping the discharge," he conceiving, like many surgeons, that no open surface could heal without suppurating. Granulations also, which are rendered exuberant by poultice, are either never formed, or exist in a very slight degree under water-dressing.

"Instead of the throbbing pain produced by a poultice, being excited, all pain is removed by the use of this remedy. A man in a fight with another, had the nail of his thumb bitten through near the root. The water-dressing was applied. A day or two after I met him with a poultice on his thumb. On inquiring why he removed the first dressing, he said "there was no use in keeping it on any longer, as it took away all his anguish," he supposing a poultice the proper application for the cure. In a word, the tendency of water-dressing (if it be properly conducted) is to induce the cure of wounds and ulcers, not requiring excitement, by the approximating or modeling process already described.

"The employment of water as a remedy for wounds and inflammation, is no doubt of very ancient date. Hippocrates is said to have discovered, by the inscriptions in the temple of *Æsculapius*, that the priests had used water mixed with secret ingredients, in order probably to give the remedy more importance in the eyes of the people."—*J. Shew, M.D.*

**DRESSING WOUNDS.**—"The *immersion* of a wounded or inflamed part either in warm or cold water, according to circumstances, has perhaps more influence on the sensations than any other mode of applying the fluid. I have witnessed the greatest effect from it, when used either warm in place of fomentation to soothe pain, or cold to abate vascular action. It would be a most valuable remedy, if any means could be devised for its application, without the inconvenience of the inflamed part being placed in a downward position. A very striking case of the benefit of immersion was communicated to me by Dr. Cardiff, then a military surgeon stationed at Kilkenny. A soldier received a thrust of a bayonet, which passed through his thumb, and between the metacarpal bones of his hand. After the bleeding had ceased, the hand was laid in tepid water, which speedily removed the pain. The immersion was continued for twelve hours, after which the hand was taken out and dressed in the usual manner (I presume with adhesive plaster), after which the pain returned with great severity and throbbing, so that it became necessary to remove the dressing and return the hand to the

water. The immersion again removed all pain, and was now continued for twenty hours, and when removed, the common water-dressing was employed, no more pain was felt, and the cure of this frightful wound was accomplished without swelling, heat, suppuration, or any of the results of inflammation, and the cicatrix that remained was soft. The man went to duty on the eighth day after receiving the wound.

"Baron Percy very truly says, 'that if it were possible on the receipt of a gunshot, or other serious wound of the elbow, knee, foot, etc., to keep the part for the first ten or fifteen hours plunged in water, we should have fewer amputations to perform, and we should save the lives of a greater number of wounded.'

"A lady fractured her tibia close to the ankle joint; great swelling, tension, and pain immediately followed. At her own suggestion, the limb was placed in a bucket of warm water, which had the effect of removing the pain, and almost all the tumefaction, before I visited her for the purpose of adjusting the fracture."—*J. Shew, M.D.*

#### CASE OF APOPLEXY AND CONSEQUENT PARALYSIS.—

A gentleman 63 years of age, stout, and florid complexion, been accustomed to rich food and a full quantity of wine daily, in a nobleman's establishment, was seized with apoplexy and paralysis, affecting the whole of one side, about a month before he came to me. The mouth was slightly drawn, memory impaired, one arm quite useless, and the ankle and foot nearly so, total constipation of the bowels, with distressing sensation of fulness in the head. Now, here was about as hazardous a case as any that comes under the doctor's notice, and such a case in allopathic hands would be pronounced one in which, at most, a partial recovery could be expected. The patient, however, had always a horror of physic, bleeding, blistering, &c. The good living of a princely board had rather too many temptations for his palate, to tolerate doctoring, even when brought to such a state as he was. He was a man of considerable decision of character, and thought for himself; and the idea of being invigorated by blistering and physic was so contrary to his judgment, that he was, to my great surprise, induced to come to me, as such characters generally prefer trusting themselves to professionally educated practitioners. The result of our applications however, was, that in a fortnight he could write his letters with the hand that had been useless, and in two months was entirely restored. It is now five



years since, and he is in excellent health, and able to walk over our hilly country with more vigour than he could ten years ago. The treatment was as follows :—

First day, on rising, hot soaping and tepid wash; forenoon, gentle fomentation back and front, thirty minutes, then wipe over with towel partly wrung out of tepid water, standing on hot pad; afternoon, sitz bath 85 deg., ten minutes, feet in 105 deg. mustard and water at the same time, cold wet cloth on the head; then steam and pack the lame leg and arm, wearing body bandage and spinal compress wetted three times per day; bed-time, re-wet bandages, and sleep in wet socks with lambs' wool over. Vary the treatment on rising and in the forenoon, by hot and tepid sheet, and alternate vapour bath and wet pack, watching the patient, and omitting baths as occasion required. The feeling in the head was the guiding symptom: if uncomfortable, have legs to calves in hot mustard and water, and stop the other treatment; at first no flesh meat, farinaceous diet, and five or six tumblers of water per day. If such cases ever have setons applied at the top of the spine, to relieve the head, or for congestion of the brain, they never fully get over the injurious effects. An elderly lady came this year to my establishment, who had been thus treated for what, in fact, was only the reflex action of the nerves in a disordered stomach, affecting the head, and she has had almost constant uneasiness there ever since, and will have as long as she lives. Not one single application of the allopathic practitioners goes to natural restoration of the weakened frame, all is depletion, or stimulants, or sedatives, all of which are totally opposed to nutrition, or to allow nature to act independently.

**CASE OF BRONCHITIS.** A gentleman, about 48 years of age, a government inspector of fisheries, tall, worn to a skeleton, expectorating matter in large quantities, appetite none, was recommended to try my establishment as a last resource. Two eminent physicians, and his own surgeon, gave him no hopes of restoration. Every means had been tried to stop the progress of the disease, but it had never been checked. Blisters would not do it; morphia was useless; porter and flesh meat were prescribed to keep up the sinking strength in vain; the drain continued, and death stared him in the face. He came to my establishment in the autumn of 1854. As soon as he arrived I inspected his clothing, and condemned it; ordered the fine broad cloth and slight

under-clothing to be replaced by substantial beaver cloth, and none being at hand, I lent him a winter suit until the tailor could rig him out. He was well soaped over with hot soap and water, then tepid wash, a spongio piline chest compress with collar, and spongio spinal worn night and day, sprinkled once a day with warm water; body bandage wetted only over abdomen, and worn only part of the day; the bottom of the throat and top of the chest kept constantly red, for weeks, with mustard poultices, and fomented for half an hour every day. No stimulants, no flesh meat; slight general treatment; the throat constantly packed with damped spongio, and a woollen scarf over. The result was, that at Christmas he presented himself at Edinburgh to the Royal Commissioners, entirely well, and was reappointed to the cold situation in the extreme north of Scotland, he had held before, and to this day he has been able to perform his duties in good health. Nature did all this,—nursing the body, soothing the frame, doing every thing to aid nutrition, forcing in nothing, nor putting stuff into the stomach in the form of physic, &c., that nature can never work into good aliment.

CASE OF SCIATICA AND RHEUMATIC FEVER.—A labourer, about twenty six years of age, of sound constitution, from exposure to hardships and keeping on his wet clothes, was attacked with sciatica in the right hip; he applied to a surgeon who not only gave him advice and medicine free, but gave him money for food: and doctors do such kindnesses more frequently than the public know of. The tongue showing a bad state of the stomach and liver, and the bowels being constipated, alterative medicines were given, and good diet prescribed. This plan, however, only aggravated the evil, as purging the bowels gave no nutrition. The man leaving off medicine, and the summer weather coming on, got better, but not well. He went to harvest work, got soaked with rain one day, slept in a barn at night, and next morning found himself too stiff to work at all, and with excruciating pains in his limbs, he was removed home to a town a few miles off. The doctor was now employed by the parish, and pronounced it rheumatic fever. Physic alone was the only remedy attempted, except a pint of porter per day, with flesh meat, which was of course adding fuel to the fire of inflammatory action, so intensely burning through the poor fellow's muscles and joints. Morphia was given to ease him and give sleep. He was told to keep

his bowels open by the medicine prescribed, if they did not move freely every day. Such treatment, being diametrically opposed to the fundamental principles of the life and health of the body, soon set the doctor fast to know what course next to adopt. He recommended him to the County Infirmary, and a nobleman gave him an in-patient's admission. Here the man was put to bed, and kept there during three weeks. He was freely purged with medicine, sometimes the bowels operating two or three times per day for the first month. A hot water bath was ordered twice a week; the man had one, but was so prostrated with it that he told them he should die if he had another, as he could not now stand at all unsupported, so this was given up. After he came out of the hot bath he was wrapped in blankets and put to bed; the perspiration was so profuse that the man said a can full of water might have been emptied into it. Doctors have it seems yet to learn how Hippocrates, the great founder of their order, many hundred years since, stopped excessive perspiration, when enough had been produced, by washing the body in cold water. Had one of our tepid shallows, or tepid dripping sheets been given after the hot bath, the man would have reaped great benefit, instead of the injury he received by such excessive sweating in so weakened a frame. Chronic inflammation commenced in the eyes, and so severe was it in one, that the doctor said he feared it would result in the loss of sight. This was entirely caused by the weakness of the frame. The object in allopathic treatment really appears to be, to get all the life out by sweating and purgatives under the idea of purifying the system, but the body dissolves under such cleansing. An M.D. and the house surgeon assiduously attended the man. The physician told the man that unless he got better soon, he must, according to the rules of the Institution, discharge him as incurable. The man replied he could not help it, and must submit. One more plan was tried by way of rousing worn-out nature, and drawing inflammations out, and that was a large blister right across the bottom of his back; it rose well, discharged well, but, as in the Earl of Derby's case 200 years ago, (see index) still mysteriously to the doctor, it did no good,—nor was it likely to do.

Now let it be remarked that all this is the usual routine treatment for such cases, rich or poor, for the man had been under two eminent surgeons for months before he went to the Infirmary, and at the Infirmary

he had attention and advice equal to any in the land, by surgeons and physicians too, and the best diet, warm rooms, and hourly attention, in fact, such that is not to be had at ordinary homes, even of those who can afford to pay physicians. The case was a failure, given up as hopeless. Not one plan had been tried in accordance with nature's laws of nutrition; all had been forcing her to act, attempting by compulsion to eject the inflammatory action, without regarding nature's complaint of the gross usage administered to the wonderfully delicate complicated structure of the body.

The man was advised by one of the surgeons to get to my free hospital. He applied; I happened to have a vacancy, and he was at once removed from the Infirmary bed to my hospital, with difficulty and much suffering; a perfect skeleton, and in intense pain. We began with appealing to the stomach and bowels by hot fomentation; then washed the body over with hot soap and water; then tepid wash, dry with a sheet, and put on wet body bandage and spinal compress; then packed the limbs in strips of wet calico, dry over, then macintosh and flannel. In twenty-four hours the man felt considerable relief; his natural feelings told him he had got on a new and more comfortable track. Soon he slept well, without narcotics, which had been given freely before; and now, after three weeks' treatment, he is free from pain. The severe inflammation in the eyes soon got well when the tone of the stomach was improved. This morning he has walked to and from the hospital up and down a high flight of steps alone, to join our morning service, his appetite good, bowels acting naturally, and only requires time to be grown into a strong man again. He is gaining weight and strength every day. He has not had a grain of physic, nor a drop of mixture, except what our cook has made in the shape of porridge, pudding, &c., and only water and milk, and weak black tea to drink. The poor fellow's best clothes are in pawn, but as he is in a warm room, they are not of so much consequence; he will have them set free when he wants them, and will, I feel sure, be able to support himself and his wife and children again, with a knowledge how to ward off such calamities in future—and this is no little consideration. I could point to scores of such cases now well, and many of them the servants of wealthy people, who, nevertheless, decline to assist or countenance us in our work. The very great gratification, however, in being instrumental in the restoration of our



fellow creatures' health, and imparting spiritual consolation at the same time, fully repays us for any worldly sacrifices. The possession of millions of money could not be put in comparison with it.

Why will not the medical profession look at such cases without prejudice and without fear of any opprobrium from their brother professionals; and when they so clearly and inevitably fail to cure such cases, determine to find out some mode of cure in harmony with the laws of nutrition? Such cases we think no more of than a bad cold, and have never in any single case failed in curing rheumatic fever. There can be no sound scientific reason given why purgatives, which injure the vital absorbents in the bowels, and sedatives, which, in a degree, paralyze nature from acting at all, should restore nature's powers. The attempt is a gross contradiction.

**INTERNAL INJURIES TO FEMALES** caused by surgical operation.—I can only allude to this; but the lady who presides and superintends the treatment and baths of the females at our Establishment, will correspond with any lady wishing for more explicit information on this and other subjects connected with female diseases or ailments. The articles on these subjects in this book are from her experience of the treatment of many hundreds of patients, of whose cases she has had the sole management.

It is no slight recommendation to our establishment, that ladies have one of their own sex to consult, without the necessity of a doctor's advice.

Grievous indeed have been many of the cases who have submitted to the use of the speculum, caustic, leeches, and the knife internally. The cases are very rare where there is any occasion for their use, instead of being of such ordinary occurrence that few escape the infliction, who apply for assistance in this class of diseases or irregularities. Nothing of the kind has ever been used at our establishment, and many have come here as a last hope of relief, and have been without any exception that I know of, cured or relieved; and the great recommendation to the treatment is, that ladies soon learn to apply it at home without further advice or assistance. There are numbers now living in comfort and in health, who have been great sufferers for many years before coming. These surgical operations are just as opposed to nature's laws, in the cure of *simple disease or irregularities*, as is the

physic, the lancet, the setons and blistering applied to the whole body. I cannot caution ladies too strongly against allowing the use of the treatment I name; it makes invalids of sound frames, and brings years of sorrow and suffering, and permanent mischief.

#### AFFECTION OF BRAIN FROM FEMALE STOPPAGE.—

I purposely avoid explaining this explicitly, as it will be easily understood by those who are interested. One case we had a short time since, perfectly insane, and dangerous to the patient's life and those of her attendants. She was, of course, not in the establishment. She had been salivated, blistered on the nape of the neck and behind the ears, leeches in the temples and the thighs, which only stopped nature more, and rendered her operations more difficult, taking the very life away. At this stage she was ordered to a mad house, but her father applying to us to see if anything could possibly be done to prevent such a calamity, the case was at once taken in hand. There was great difficulty in controlling the patient, as she was strong. The result was, that soon as a crisis came out over the bowels and legs, she entirely recovered her reason and her health. This was in about two months from the first application of our treatment and bandages, and she is now in perfect health and has never been ill a day since. We can give a reference to this case in our own neighbourhood. Others, of various ages and constitutions, who have been the same, and from somewhat similar causes, quite deranged in intellect, or martyrs to pain, have had their reason restored and their health thoroughly established. To some of these we can give references.

**INSTRUCTION TO MOTHERS FOR THE BENEFIT OF THEIR CHILDREN.**—The hydropathic system may be safely applied to children even at the age of five or six weeks, only strictly attending to the rules below.

*Wet pack.*—Carefully read the directions given in this book, using a towel instead of a sheet, a pillow instead of beds for covering. Wring the towel for packing out of water about eighty degrees (or new milk warm); from half an hour to three quarters is quite long enough. Take the child out and wipe it all over with a wet towel, *the same heat*, and then rub quite dry.

*Body bandage*, very useful: make and use it according to directions

previously given, only differing of course in size, and wringing it out in water, new milk warm, as above.

*Chest Compress*, also, is very efficacious; difference the same as already stated in the body bandage.

**DIRECTIONS IN CASES.**—*Fever or Sickness in Teething.*—The first thing in the morning rub the child all over with a wet towel, and dry according to directions given in this book; but the water must be about new milk warm. Eleven o'clock put the child in a pack, as directed above; and at night put it into a tub of hot water, as hot as it can bear, for a quarter of an hour, and then into a tub of tepid water two minutes, well rubbing it all the time, according to directions given. Put on the chest compress and body bandage for sleeping in, and a wet bandage also round the child's head. Continue this treatment till the fever has subsided, and then only give the wet and dry towel.

*Inflammation in the Chest.*—Foment the chest half an hour, as previously described; then put the child in a pack for half an hour, then wipe the body over with a wet towel, after which, put on the chest compress and body bandage. Four hours after this foment again as before, and rub the child over with a wet towel again, replacing the wet compress, and at night use hot and tepid bath as previously stated in Fever cases. Continue this treatment till the child can breathe freely, and then slacken the number of baths by giving only the pack, and applying the fomentation at night.

This treatment was applied to a child near our residence, who was only a few weeks old, and a perfect cure effected, after the child was given up. Many more cases might be given.

For weak spines, the constant use of the wet compress would be found very advantageous, and also sitting bath.

**CASE OF A LADY**, upwards of seventy years of age. This lady came with stomach and liver affection, but more particularly to see if any relief could be given for the sufferings she endured owing to varicose veins in the legs, and for which she was using what are called patent elastic stockings, made to fit very tight on the legs, and so press in the protruding veins. Her medical advisers could devise no better means of assisting the power of the veins to propel their contents than this mechanical contrivance, which being so contrary to nature's operations, only gave temporary relief, with a good deal of inconvenience, and lead-

ing, eventually, to dropsy in the legs. The patent stockings were at once removed, and damped spongio substituted, and after a short time, wet calico strips with dry over, and macintosh and flannel; the legs steamed often, then general slight hydropathic treatment to the whole frame. A crisis rather severe came out on the legs, which entirely restored them, and all bandages were cast aside. The general health was established, and in six months, she left our establishment with her maid for a tour over England, and has since frequently informed us of her excellent health.

#### SINGULAR CASE OF ENLARGEMENT OF THE BOWELS.

A lady, about 46 years of age, from beyond the sea, who will not be recognised by the readers of this notice, came to see if anything could be done for her relief, from a distressing enlargement of the bowels, which had commenced after a bad confinement fifteen years previously. The whole of the abdomen from that time began to enlarge, until it spread on the hips, and half way down the thighs, and protruded in front enormously. The enlargement was of a soft, light, spongy character, and baffled all the efforts of the most eminent of the medical profession to reduce. I had the opinion of my consulting surgeon on the case; he declared that he had never witnessed such an one during his long practice, and gave no hopes of cure. I offered to take the case to try what could be done by our Hygienic means, to stimulate absorption and increase exudation from the skin. I could safely assure the patient that benefit to her general health would be the certain result of our plans if adopted, by the extraction from the system of the enormous quantities of an infinite variety of fancied curative compounds she had been in the habit of taking for many years. I saw from the state of the tongue, and other evident symptoms of deranged health, that there was room for great improvement there. Hydropathy carefully applied has this great recommendation, that it can always be made useful to the health in some way, and without any risk of injury. The treatment prescribed was of a general tonic kind, and fomentations and spongio piline bandages over the whole of the enlarged part, kept damp night and day. Severe crisis came on in a few weeks over the bowels, excessive discharge, and the kidneys acted powerfully. The result was, that in about six months the lady returned to her home abroad, entirely



cured, reduced to her natural size, and in excellent health, to the great joy and astonishment of her husband and friends.

**CASE OF NEURALGIA.**—A widow lady, aged about forty, had lost her health by nine years' attention on her greatly afflicted husband. After his decease her health gave way, and she became unable to take any active exercise, and was entirely confined to the house without any apparent disease, except neuralgia in the head, and especially in the jaws. For this five teeth were extracted, and much medicine administered, but the patient gradually sunk into such a state of weakness, that she could not raise her hand to her mouth, and only spoke in a whisper. Here the gross ignorance of the nervous system shewn by the medical attendant was strikingly proved. The nervous system had been prostrated by long and anxious watching and confinement. The cause was easily discoverable and very discernable. There was no trace of disease of any vital organs. The system wanted rest and increased powers of assimilating food, and making good blood and strong nerves. The suffering in the head and jaws might easily have been traced to the true cause, as the teeth were not decayed. Outraging the system by drawing the teeth and keeping the unfortunate bowels what is called "open," were all but killing the patient.

In this state we were requested to take her into our establishment, with a nurse to attend her. I at first declined to receive her, as I was afraid she would almost die in the act of removal. But to induce me to take her she was represented as not being so bad as I had supposed, I consented to receive her, and she lay in bed all but dead for the first few weeks. The result of our nursing and comforting the injured nerves and the calomel'd bowels was, that in six months she left thoroughly restored to sound health, and is so at this time, now two years since she left.

**FATIGUE AND COLD AFTER TRAVELLING.**—On returning from a journey on a very cold frosty evening, and having had little sleep the night previous, (and little opportunity for a comfortable meal the day or two before) on arrival at home I took tea at six o'clock, and at eight had a hot shallow bath twenty minutes, soaping over well with common yellow soap and flannel pad, and with a hot pad on the chest and bowels while in the bath; on coming out of the hot

shallow had sponge over with water nearly cold; dressed partially, then had a cold sitz six minutes; dressed entirely, and felt thoroughly restored and all fatigue gone; went to bed at usual time, slept soundly, and in the morning felt the delightful invigorating effects of the evening's bathing operations. Were this adopted after cold fatiguing journeys, many would be saved from illness and disease, as the system often suffers from lowering of the vitality of the frame, for days or weeks after.

**ADVICE TO A VISITOR.**—The proprietor of a public journal is at this time (winter) a visitor at the establishment; he complains that in the winter he is seldom without a bronchial affection, and consequent cough and expectoration, which, if not stopped, must inevitably lead to serious disease or consumption. He is clothed in thin broad cloth, light open waistcoat, black silk stock, no under clothing, cotton stockings gartered under the knee, preventing the free circulation of the blood to the feet. His medical adviser although giving him medicine for years to stop the cough, never once enquired as to his clothing, or gave him a hint that it was wrong. Before expecting any benefit whatever from our baths and bandages, I ordered him good warm under clothing, and beaver cloth coat and vest. The vest made to button up to the throat, and with short sleeves to protect the arm pits. I have not the least doubt he will commence a new era in his life and usefulness. With even two days' baths and warm under clothing, and lambs' wool socks with body bandages he felt altogether different and more comfortable. These unprofessional matters are as absolutely necessary for the surgeon and physician to attend to as any of their prescriptions for the restoration of bodily vigour; and if not attended to will render any remedial measures unavailing.

**ADDITIONAL NOTE ON CLOTHING AND CHEST COMPRESSES.**—This work has been delayed partly from extending it further than I originally intended, and partly from the press and engravers not being able to keep pace with my MSS. Winter is now come, and, as usual, has brought with it the regular supply of bronchial and consumptive patients, the majority, by far, from not taking the ordinary and necessary precautions on change of season, from a very warm and beautiful summer to the present state of the weather, when

the thermometer is down to 25 at nine a.m. A few months since it was almost regularly at 65 to 70, with a mild south or west wind. The beginning of this winter has been the mildest for a great number of years, but the sun not having power to dissipate the moisture, consequently influenza and bronchial affections have been very prevalent.

I use very light clothing for summer, mostly linen trowsers and vest. When autumn comes on, I make some alteration, thicker under and outer clothing. The autumn clothing is ready for spring, and the winter for the following year; by this plan no more expense is incurred, and while I have been able to attend to my duties, and prescribe for those who though naturally more robust than myself, have been laid aside simply from not following nature's hints in guarding against the change of season.

The usual mode of making waistcoats leaves the chest too much exposed (for the armpits and sides of the chest are most tender). A person goes out, buttons inner and outer coat up close, becomes warm with walking, the armpits and sides of chest probably in a more or less state of perspiration; he comes in-doors, throws outer coat off, unbuttons body coat and at once admits the cold air to the exposed parts under the arm and front of chest, perspiration is at once checked, without the reactionary effect of our cold water applications, the blood is driven in, and congestion takes place. These may appear to some trivial and unnecessary matters to notice, but when patients come with the mischief done, the very same principles have to be considered and put in practice for their recovery, which, had they been adopted before, would have saved them from the attack. Gentlemen's vests for autumn, winter, and our generally cold springs, should be of cloth, thick for winter, and made to button up to the throat, and with short fine cloth sleeves, about six inches long; these sleeves protect the armpits and sides of chest, and the comfort and usefulness of them can only be appreciated by those who have tried them. The absurd fashion of exposing the chest by wearing waistcoats open in front, causes great numbers constantly to suffer from chest affections, and eventually to lose their lives. The usual fashion is to have the legs and arms, and parts of the body where there are no vital organs, and which would take no harm from exposure, (as in the case of the kilted Highlanders,) carefully guarded from cold. Persons would not like slits in these

garments to let in the cold air, but they do not object to have the vest open, allowing the cold air to drive in the blood from the surface of the chest and windpipe, and consequently causing cough. What does the doctor prescribe when cold has been taken in the chest, with bronchitis, or inflammation of the chest? Why, the first thing he thinks of is to cause counter irritation on the surface by blisters or mercurial ointment, making the chest red with the blood that he wishes to draw away from the congested vessels internally, and which the patient might have done by the most simply natural precautions on change of season, in keeping in warmth on the surface of the chest, and preventing checked perspiration by a more sensible fashion of vest and thicker coats, &c. Thousands go off every season, of consumption and bronchitis, from neglect of these simple precautions. Females should also have warm chest and throat clothing; but here again multitudes sacrifice their health and lives to the fashion or mode of the times.

Of all parts of the body requiring protection, none is of such vital importance as the chest, and all fomentations, compresses, blistering, and other counter irritants are entirely nugatory and temporary in their effects if it is not well protected, so as to keep the surface and the lower part of the throat constantly warm. Whatever may be said of the benefit of exposure to harden, none can set the laws of the constitution of the body at defiance with impunity. Labourers and others, who are often exposed in the winter, (although in summer they can expose the chest without risk) die by hundreds from bronchitis and consumption, from having laid the foundation of the disease by exposing the chest. I am seldom without such cases in my free hospital.

The return of winter with bronchial and consumptive attacks, has set us studying how to make our applications more generally useful; and finding spongio chest compresses so expensive. I have adopted a plan of using two thicknesses of red or white flannel stitched to the macintosh or silk outer covering. They require sprinkling with water oftener to keep them damp, but are also very useful to wear dry when the sharpest part of the throat or chest attack is over, and the expense is trifling. For sizes, &c., see page 58.

**SUDDEN ATTACK OF BRONCHITIS** will generally be arrested by immediate hot fomentation to the chest for one hour with the foment-



ing pad and can, as at page 46. After the fomentation rub the chest and trunk dry with a dry napkin, then lay on a mustard poultice of a large size quite over the chest and bottom of the throat. Keep it on as long as it can be borne, fifteen, twenty, or thirty minutes; wipe the mustard off with soft paper and rub with a dry napkin, then put on a dry spongio or flannel chest compress with collar or some similar substitute. Keep it on six or eight hours or all night, and in the morning have a hot sitz (page 147) with hot pad, and chest and feet in hot water ten or fifteen minutes, then tepid sheet or sponge over. Sprinkle the chest compress and collar with tepid water and wear it constantly, rewetting once during the day until well. If it is not convenient to have a hot sitz, or from heart affection, piles, or full habit, or spinal affection, it is not advisable, repeat a fomentation to the chest, and tepid sheet or sponge over. Flesh meat and all stimulants should be avoided, as I have noticed at page 82. If at all practicable, a change to a more healthy air and situation is very advisable for a short time. I have seen immediate relief from this.

**DELICATE TREATMENT** is of great importance to adopt in many cases, and for old chronic affections of the vital organs, as the liver, stomach, bowels, lungs, and kidneys. As the most intelligent practitioners of medicine do not rely upon the amount of their prescriptions for cure, neither should persons get an idea that the constant application of water in the various excellent methods which have been discovered to be of so much use, is alone to be looked to for cure of disease. The inherent curative power of nature should always be taken into account, and all treatment made subservient to assisting, by the gentlest means, the natural efforts of self cure. The practitioner should pay no regard to the opinion that may be formed of his knowledge of the curative art, when he recommends simple diet, entire rest, good air, and proper clothing, if he has reason to believe that these alone are required. Cases are frequently coming under our notice that require little application at first of any of our bracing baths. One such, a gentleman age twenty-eight, for many years dyspeptic, liver deranged, head uncomfortable, and very low vital power; the life would soon be washed out of such a patient by active treatment, or even what would be considered moderate treatment. For weeks all the water

application he had was as follows, and he gradually gained strength for more active treatment.

Case No. 1.—Under the following treatment he gained a stone in weight in three months, and gradually regained his appetite and strength, and was quite free from the constant gnawing feeling at the stomach and nausea.

On rising have a sitz 86 deg. for twenty minutes, sitting quite still quarter of an hour, then soap the bowels gently, and sponge over the whole body in the same water. Forenoon, apply the spongio out of hot water to bowels, before renewing it, rub gently three minutes with hand and 50 deg. water, the place where it has lain. Once in the forenoon keep the feet in a mustard and water bath to ankles, from 70 to 80 deg. temperature, for twenty minutes, moving them well all the time one against the other, and then have them well dry rubbed by attendant, with warm dry hand, till quite warm. Afternoon, have sitz as on rising. Bed-time, have a half-hour's fomentation with hot pad, and whilst in this keep sipping cold water; put a mustard poultice to the soles of the feet, and hot water to them. The reclining position should be the principal one all day, and keeping hot bottle to feet. If spasms are very bad then have fomentation as at bed-time. The above treatment alternate days, with the following:—

Let the abdominal compress be re-wetted every hour, and gently rub the bowels with hand and tepid water for one minute before putting it on again. Sip water all day 50 deg. Whenever a restless bad night, then have half an hour's fomentation in the bed-room, get into bed and lie still till dinner-time; and in afternoon take the foot bath, put mustard poultice on the part above the crisis where there is pain, and keep renewing it as often as it can be done without injuring the skin, then omit other and follow crisis treatment. On rising have dripping sheet 70 deg. Forenoon, have a running sitz 80 deg. reduced to cold, rubbing the bowels whilst in, alternate with dripping sheets, 90 to 70 deg. Afternoon, have a dry rubbing over the whole body, having the feet in mustard and hot water during the rubbing. Bed-time, have quiet sitz, quarter of an hour 90 deg., and soap well, then put on abdominal compress out of hot water, leave off meat and take cod liver oil every night, one tea-spoonful. On rising have dripping sheet cold, standing on hot pad. Forenoon, have running sitz 90 deg., soap before

going in, and lower to cold, and time according to feelings. Afternoon, have dripping sheet as on rising. Bed-time, a hot fomentation ten minutes.

Diet as follows :—breakfast, a very lightly boiled egg, and a little toast ; tea only lukewarm, very weak, and pretty well of cream. Dinner, cold meat and bread, and a little farinaceous pudding. Tea as breakfast.

Case No. 2.—A gentleman, aged twenty-seven, dyspeptic and affection of the liver six years, from close confinement in business, spare form, and not naturally of robust constitution, for many years took medicine to correct acidity and give appetite, and to make the bowels act, until he was entirely unable to continue his business duties. Under the following simple treatment he soon had a good appetite, stomach comfortable, and bowels regular.

On rising have cold towel rubbing half and half, that is, well rubbing dry and dressing upper part of body before doing the lower part. Forenoon, have the feet and hands in 100 deg. mustard and water ; then have the weak part between the shoulders covered with a mustard poultice, till red ; then have the hands and feet rubbed with cold water and hand till warm, then dry rub them. When he could not bear the mustard poultice on, then put on a dry heated pad all over the weak part till he could bear another. Afternoon, a cold towel rubbing as on rising. Every other day omit this and have a mustard spinal slapping for five minutes, feet on hot pad, and holding warm pad to bowels, and if the feet are cold put them into 100 deg. mustard and water. At bed-time, have the bowels well soaped with hot water, then wiped dry and rubbed well with cod liver oil and hand for two or three minutes. Keep reclining most of the day, in that position have a few gentle exercises (Ling's movements twice a day). Sip cold water all day, and keep hot fomenting can outside on the stomach whilst reclining, and put on a piece of new flannel over the bowels, twice round.

Diet as follows :—A rasher of bacon and white bread, and cold water for breakfast. Eleven o'clock, cup full of beef tea, and a little toast. Dinner, vegetables, fruit, and bread. Four o'clock, a raw egg beaten up with a little warm water and sugar. Tea as breakfast.

Case No. 3.—Studious habits and confinement brought on dyspepsia,

and general weak health; in this state had a blow on the foot, which became painful, swollen, and inflamed. The doctor's attention was concentrated on curing the foot, and every orthodox means was tried in the way of blistering, issues, and ointment and calomel for the general health. All, however, was unavailing, and the not very agreeable prospect of amputation was anticipated.

The following simple means soon told on the whole frame, digestion became good, good blood was made, the foot soon threw off quantities of morbid matter, (the result of the new blood expelling the diseased part) which there had previously been no vitality in the limb to effect, but which the soothing processes, and the roast mutton, the pudding and cream, &c., soon showed what nature could do with nutritious food, instead of physic and blisters. The ankle is yet weak, and will take a lengthened period to restore from the outrages committed upon it by blistering, &c.

On rising have a hot dripping sheet, and then soap all over with pad; then take hot sheet again, and rub well. Then have a large can of cold water poured down the spine, standing upon hot pad. Forenoon, chest and throat well rubbed with cold water and hand, and attend to "crisis" for leg, then take cold running sitz for five minutes. Afternoon, hot pad to chest and stomach, and then let branch douche fall upon spine two minutes, keep a little hot water in shallow all the time. Keep dry rag on leg and leave flannel off. If the leg becomes very hot and painful, then pack it for an hour.

A POISON: BY DR. PROUT.—There is an article much used in various ways, though not as an aliment, the deleterious effects of which on the assimilating organs require to be briefly noticed: namely, tobacco. Although, confessedly, one of the most virulent poisons in nature, yet such is the fascinating influence of this noxious weed, that mankind resort to it in every mode they can devise, to ensure its stupifying and pernicious agency. Tobacco disorders the assimilating functions in general, but particularly, as I believe, the assimilation of the saccharine principle. I have never, indeed, been able to trace the development of oxalic acid to the use of tobacco, but that some analogous and equally poisonous principle (probably of an acid nature) is generated in certain individuals by its abuse, is evident from their cachectic looks, and from the dark and often greenish yellow tint of the blood. The severe and



peculiar dyspeptic symptoms sometimes produced by inveterate snuff-taking are well known; and I have more than once seen such cases terminate fatally with malignant disease of the stomach and liver. Great smokers, also, especially those who employ short pipes and cigars, are said to be liable to cancerous affection of the lips. But it happens with tobacco, as with deleterious articles of diet, the strong and healthy suffer comparatively little, while the weak and predisposed to disease fall victims to its poisonous operation. Surely, if the dictates of reason were allowed to prevail, an article so injurious to the health, and so offensive in all its modes of enjoyment, would speedily be banished.

**CASE OF RHEUMATIC FEVER.**—A case of rheumatic fever was cured by the following treatment: on rising fomenting pack followed by dripping sheet or shallow bath, at first not quite cold, say 65 degrees; forenoon, vapour bath ten minutes, and dripping sheet after nearly cold; three o'clock wet pack one hour, followed by dripping sheet as above. The fever generally returns about night, and if this be the case give another wet pack of half an hour from seven to eight o'clock. Wet a napkin in cold water, wring it out, and wear it round the head night and day, frequently renewed in cold water. Shallow baths are better than dripping sheets where they can be had, rubbing the body well while in the bath. Wear a wet body bandage night and day; diet as at page 29, omitting flesh-meat if fever be high. No stimulant of any kind nor medicine; not to sleep in flannel. We have never found this treatment fail in soon effecting a cure, repeated daily until the fever is subdued, and then fewer baths are needed.

Wet bandage, or spongio piline should be constantly applied to any limb or joint most affected. If the complaint be much in the hands or feet, put them in hot water, 100 degrees, for fifteen minutes, and then in cold for one minute. This may be applied three or four times during the day. The bowels should be fomented again at bed-time, and replace wet body bandage. Cold water to be taken by a little at once to the extent of three pints or more during the day, or as the patient requires.

**EPILEPSY.**—On rising a sitting bath fifteen minutes, and dripping sheet 65 degrees, sitting bath 70, until it can be borne cold, comfortably. Ten o'clock head bath in water nearly cold, 65 degrees; bathing the

temples with a sponge at the same time twenty minutes. If a female the back hair need not be undone, as the water remaining in the hair keeps the head cool. After the head bath use a foot bath, in water at first 65 degrees, for ten minutes. Eleven to twelve o'clock wet pack one hour, and dripping sheet after, or shallow bath; water 65 or 70 degrees. The bowels fomented (hot water) twenty minutes before going into pack, is very useful. Half-past two o'clock head and foot bath as at ten. Half-past three, vapour bath. Six o'clock, sitting bath twenty minutes, and spinal rubbing ten to fifteen minutes of the time; taking care to keep the body covered with a blanket. Wear body-bandage night and day for a week or two, and then leave it off for a few days; and if cold, take it off and wring it out of warm water. Ladies will understand when to leave off the treatment for a few days.

I feel much confidence in these directions if persevered in, from seeing the good results in many cases.

Diet is very important, and I cannot give better directions than my book. Any one liable to epileptic attacks should be very strict in diet, and make it a matter of conscience to be so. Nothing should be taken after seven, in the evening. Drink about four tumblers of water per day, by little at a time. Avoid all seasoned dishes and tea. Cocoa in the ribs good, coffee and all stimulants of every kind bad, water best.

It is only by a perseverance in these plans a cure can be expected. After the first week or two pack twice per week, and instead of pack at eleven, use a dripping sheet or shallow.

A SERMON PREACHED BEFORE ROYALTY.—By her Majesty's command a sermon preached before the Court in the parish Church of Crathie, on the 11th of October, has been published. The author is Dr. Robert Lee, the Professor of Biblical Criticism in the University of Edinburgh; and the subject is—"What christianity teaches respecting the Body." Dr. Lee shows that the care of the body is declared in the Bible to be a christian duty, and that the manner in which this care is to be bestowed is taught by God in the uniformity and constancy of the laws of nature. By violating these laws an enormous amount of misery, and premature death are occasioned. "It is reckoned," says Dr. Lee, "that one hundred thousand persons die annually in England of preven-

tible diseases. In the same proportion more than a million and a quarter must die annually from the same causes in Europe.

Probably not fewer than four hundred thousand men were killed during the late Russian war. But during the same period ten times as many died in Europe alone from preventible diseases. The slaughter of four millions of persons during three years, in a war against the laws of health! So appalling a fact is surely deserving the earnest attention, not only of governors, politicians, and philanthropists, but of all men who profess christianity, and especially of those who are appointed to teach it, because the laws of health, through disobedience to which such multitudes perish, are God's laws, for He not only ordained them, but He executes them impartially and universally, before our eyes, and upon ourselves." Dr. Lee dared not in such a place and before such an audience preach all he knew on the subject, either as regards the hundreds of thousands slain by intoxicating drink, by the theatre, the ball room, or the race course, which encourage poor souls to seek in vicious pleasures the gratification of the appetites; much less dare he touch on the tens of thousands lost by the unnatural outrages of the body by physic, setons, blisters, and all the numberless inventions of the doctors.



### THE READY METHOD IN SUSPENDED RESPIRATION IN DROWNING ; &c.—BY DR. MARSHALL HALL.

1. Treat the patient *instantly, on the spot, in the open air, exposing the face and chest to the breeze (except in severe weather).*

*I.—To Clear the Throat—*

2. Place the patient gently on the face, with one *wrist* under the forehead ;

[*all fluids and the tongue then fall forwards, leaving the entrance to the windpipe free.*]

If there be breathing—wait and watch ; if not or if it *fail*,—

*II.—To Excite Respiration—*

3. Turn the patient well and *instantly* on his side, and—

4. Excite the nostrils, the throat, &c. and dash cold water on the face previously rubbed warm.

If there be no success, *lose not a moment*, but *instantly*—

*III.—To Initiate Respiration—*

5. Replace the patient on his face, *raising* and supporting the chest *well* on a folded coat or other article of dress ;

6. Turn the body very *gently on the side and a little beyond*, and then *briskly* on the face, alternately ; repeating these measures deliberately, efficiently, perseveringly, *fifteen* times in the minute, occasionally *varying the side* ;

[*when the patient reposes on the chest, this cavity is compressed by the weight of the body, and expiration takes place ; when he is turned on the side, this pressure is removed, and inspiration occurs.*]

7. When the prone position is resumed, *make* equable but efficient pressure, with brisk movement, *along the back of the chest* ; removing it immediately before rotation on the side ;

[*the first measure augments the expiration, the second commences inspiration.*]

\* \* THE RESULT IS—RESPIRATION ;—AND, IF NOT TOO LATE,—LIFE !

*IV.—To induce Circulation and Warmth—*

8. Meantime rub the limbs *upwards*, with *firm grasping pressure* and with *energy*, using handkerchiefs ; &c.

[*by this measure the blood is propelled along the veins towards the heart.*]

9. Let the limbs be thus warmed and dried, and then clothed, each bystander supplying a coat, a waistcoat ; &c.

10. *Avoid the continuous warm-bath, and the position on or inclined to the back.*



ON SYNCOPE SENILIS, ARISING FROM GASTRIC IRRITATION. BY JOHN HIGGINBOTTOM, ESQ., F.R.S. *Fellow of the Royal College of Surgeons. Read before the Nottingham Medico-chirurgical Society.*—I have given the name of “syneope senilis” to this affection, particularly to direct the attention of the profession to the aged. The same complaint is common to all ages, but in a more aggravated form in infancy and old age. I am not aware that the affection has been specially noticed by any author, except under the head of indigestion, and the sufferers themselves often call it a bilious attack. I do not think that the symptom of syncope is so apparent in infancy; and I believe in middle age the attacks are slighter, and not often serious. The syncope in old age is very apparent, and is the first symptom requiring prompt attention, for if remedies are neglected the complaint becomes sometimes much aggravated, and is followed by convulsion and death.

It is about thirty years since I first noticed particularly the syncope senilis. The subject was about seventy years of age. I thought at that time it was a precursor of an attack of apoplexy, the patient having had a slight paralysis when about twenty-three years of age, which affected him slightly through life. I was glad to find, on his recovery, that there was no increase of his paralytic symptoms. Since that time I have often observed the same syncope, unattended by any permanent ill effects.

My patients have been from sixty-eight to eighty-six years of age; the youngest sixty-eight, the oldest eighty-six. I am not aware that they have laboured under any organic disease whatever; but we all know, that at an advanced age the brain and heart, the nervous and vascular system, are frequently more inactive, and in an impaired condition.

In the cases I have attended of syncope senilis, gastric irritation appears to have been the sole cause of attack. At that advanced age, mastication of the food is very imperfectly or not at all performed, for want of teeth; solid animal food has been eaten when the stomach has been in an unfit state to assimilate it, usually after having had a longer walk than the patient has been accustomed to, or had more muscular exertion than usual, so as to produce fatigue, and sometimes after exposure to cold; all which tend to weaken the power of the stomach.

On this account the food remains an indigestible mass in the stomach, and gives rise to gastric irritation, producing syncope and convulsion, which sometimes follow, often slight at first, but becoming more formidable, or even fatal, if proper remedies are not promptly used.

I was called to a patient about three o'clock in the morning, his wife having been awake by his hard breathing and noise in his throat. She found her husband was in a fit. I was directly sent for. When I arrived he had partially recovered, but very soon after he had a second fit, which had the appearance of a slight attack of epilepsy, attended with convulsion, but had no bitten tongue, as is usual in severe attacks of epilepsy. As soon as he was sufficiently recovered from the attack, so that he could swallow, I gave him half a drachm of the powder of ipecacuanah with fifteen grains of bicarbonate of potass, which was followed by full vomiting; he ejected lumps of solid beef, which appeared to have been swallowed, or rather bolted, without having been masticated at all; one of the pieces, I observed, was about an inch long and three quarters of an inch in thickness. Although the food had been taken into the stomach about sixteen hours, the acute corners and edges of the beef appeared as if just cut with a sharp knife, not the least digested. No further remedy was required after the emetic, but attention to the bowels, which he reluctantly submitted to, saying he was quite well.

In a month afterwards he had another fit of a similar nature. He fell down in a moment on the floor, and remained in the same state as in the former case for half an hour; the same remedies were resorted to as before, and he recovered quickly. I expect the patient will have a return of the syncope, as he is very wilful, and will not attend to any means of prevention. This patient was the youngest, being sixty-eight years of age. Previous to the first fit he had been using much muscular exertion, still being active in business.

Another case is that of an old patient of eighty-six years, who at intervals of a few weeks had several similar attacks of syncope. After the last fit, attended with slight convulsion, I was induced to think it had been occasioned by taking solid food, which was swallowed after imperfect mastication; on that account I forbade him the use of animal food altogether. This regimen he has now strictly adhered to for some months, except a few times having taken a small quantity of tripe. He

has had no return of his fainting fit, a much longer time having now elapsed than the interval, after which he had several of the previous attacks. I would make an observation here, as a contrast to the former case I have related in the younger man, that at a more advanced age the patient does not recover so quickly from the attack, but requires particular attention to the digestive organs for some days, with gentle aperients, and saline medicine in a state of effervescence. (*Aperients are unnecessary and injurious ; I recommend exciting the throat with a feather, or mustard and water to produce vomiting.—J. S.*)

It is not unusual for even young men to have similar attacks from indigestion, when sudden syncope for a short period comes on, recovery taking place in a few moments. The same attack at an advanced age, I presume, would be attended with aggravated symptoms, such as those I have witnessed.

The lamentable illness and death of the Duke of Wellington appears to me to have been a case of "syncope senilis," which became aggravated, and terminated fatally. In the "Life of the Duke of Wellington," by Stoequeler, it is stated that "the health of his Grace had been unusually good for some days, and on Monday, the 13th of September, it was remarked that he took a longer walk than usual through the grounds attached to the Castle." THE LANCET of the 16th October, 1852, in the leading article, says, "During some days preceding the 14th September, 1852, the day of the Duke's death, there had been a hot midday sun, a considerable wind, chiefly from the north, and the evenings and nights were cold and chilly. The thermometer, on the night preceding the fatal event, was only six degrees above the freezing point; on the preceding day it had been up to ninety-two degrees Fahr. No precautions were taken to obviate the effect of such a change on the aged and necessarily weak system of the Duke, and the pallor of his countenance observed on the preceding Sunday showed that this influence was telling on the circulation. The stomach was ill prepared to receive a hearty dinner, and the difficulties of that organ were further increased by receiving a considerable quantity of food imperfectly masticated in consequence of the Duke's loss of teeth." . . . . "He took for dinner, *mock turtle, turbot, venison, and pudding.*" It is further added in THE LANCET, "It is probable that had the Duke's stomach been relieved by vomiting in the early part of the morning, he would now be

with us; it is even probable that such an effort, if successful at nine o'clock, might have saved him; but every hour added to the exhaustion, and rendered such an act difficult."

My brother-in-law, Dr. Marshall Hall, observes in a paper in *THE LANCET* of October 30th, 1852, "On the Malady of the late Duke of Wellington,"—"It is obvious that if efficient vomiting could have been induced, the offending cause of this lamentable malady would have been removed, and all might have been well; he would, humanly speaking, still be with us. We have no evidence that the Duke of Wellington had any organic disease of either the brain or the heart. It is to be regretted that there was no post-mortem examination."

I fully concur with the leading article in *THE LANCET*, and with Dr. Marshall Hall's opinion, that an efficient vomiting at an early period would have been a most effectual remedy.

I know no emetic equal in such a case to half a drachm of the powder of ipecacuanah, with the addition of ten or fifteen grains of the bicarbonate of potass. as it corrects any acidity in the stomach, and produces full vomiting both safely and quickly: it has also the power of raising the system to its normal condition, without producing any unnatural excitement, and promotes the healthy secretions of the various organs of the body. The nausea and insufficient vomiting arising from natural efforts to empty the stomach, I have no doubt produces debility and exhaustion, when a full vomiting from ipecacuanha has the contrary effect. Should the first half drachm of ipecacuanha not operate, a second such dose may be given with the greatest safety, it only having the effect of a more speedy operation. If vomiting still should not follow, the fauces might be irritated with a feather, to excite it. I have for the last forty years given ipecacuanha emetics with the same freedom as I have purgatives, and never saw any bad result.

It might be thought by some individuals that abstaining from animal food at the period of old age might be attended with the loss of health and strength. I had an instance in a relation of my own family, who, at seventy years of age, quite abstained from animal food, and also from wine. After the lapse of ten years, when at the age of eighty, he was requested by his relatives to resume his animal food and wine, he excused himself from taking either of them by saying he did not want them, for he was very healthy, and in good spirits, although very thin in body.



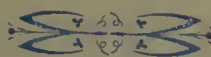
He lived till he was nearly ninety years of age. This old gentleman, I apprehend, would have been a likely subject for the syncope senilis had he been in the habit of taking solid animal food, which he could not masticate, and would most probably have shortened his days.

At an advanced age, when the physical powers of the body are declining, and second childhood approaching, and at that period when comparatively little exercise only can be taken, the body does not require the same solid food. Nature points out the use of milk and light farinaceous matter as an aliment, as being more natural, and adapted to that period of life; such food alone is sufficient to keep the body in a healthy, cheerful, and happy state. It has been erroneously stated that "wine is the milk of old age;" I believe the truth is, that milk is the wine of old age, for both the first and second childhood, the most natural and the most nutritious. Erasmus Darwin used to say "Milk is white blood." The oldest individuals I have known, have lived principally upon milk diet. Second childhood may be treated much in the way as directed by the late Dr. James Hamilton, Professor of Midwifery in the University of Edinburgh: "Plenty of milk, plenty of flannel, and plenty of sleep or rest."

**CONSUMPTIVE PERSONS** may use the water treatment with advantage, but it must be very cautiously used, and not with cold water, say seventy to seventy-five degrees. *Treatment*.—Morning, on rising in summer, at half-past six, and in winter at half-past seven,—sitting bath four minutes, about seventy degrees, and spinal rubbing while in the bath, and then just sponge the body over slightly with the water in the bath. Keep the body covered as much as possible during the operation with a blanket, and after the sponging dress entirely, quickly, taking a little cold water by sips. It is important not to expose the body to the air while undressed, as it rapidly loses heat, and in persons of weak habit is injurious. Leave out the sitting bath if the patient does not get warm. The ordinary plan of sponging the body with water when only partially dressed is often very injurious. A dripping sheet, while it washes the body, keeps all the animal heat in, and becomes, in fact, a slight steam bath, and in chest affections is very beneficial, used tepid with a hot water pad, or dry flannel over the chest while having the operation. At noon, head bath ten minutes, sixty-five degrees, and foot bath after, five minutes. Evening the same. Wear

a chest compress night and day frequently sprinkled with little tepid water, but not to drip. Cod liver oil is efficacious—two tea spoonfuls per day. Light hosiery vest for summer, good lambs' wool for winter, and lambs' wool stockings winter and summer. No fruits, nor any kind of stimulants. The clothes to fit up to the throat, especially in winter, and short sleeves to outer waistcoat, to protect the arm pits. If the bowels are not regular, wear a body bandage in the day for a few days, or a week at a time; sometimes a consumptive patient cannot bear half the above treatment, and then feelings and symptoms must dictate. All stimulants and flesh meat should be avoided, and a respirator worn on going out, and if cough troublesome in cold weather, wear it in night also.

**NERVOUSNESS.**—This treatment is peculiarly beneficial in cases of nervousness from whatever cause. I have had many cases where it has not been safe to leave the patients by themselves, but who have entirely recovered by a short and strict application of the baths and diet. *Thomas Beardmore*, of Wirksworth, about 55 years of age, was a remarkable case. He had been under the doctor's hands and could get no relief, and, in fact, was becoming rapidly worse; so much so that the doctor recommended razors or anything likely to injure him to be kept out of his way, and to be watched. When Beardmore's brother brought him to me, he had every symptom of derangement, and I had him well looked after. Our system very soon brought him round, and I had the pleasure on Sunday evening last, at my tent meeting, of seeing him with a smile on his countenance, and on shaking hands he was thankful to say he was perfectly well. The doctor gave this case up, knowing very well he could not administer any relief by physic, bleeding, blistering, &c. While I am writing this, a patient similarly affected, has begun his first morning at the baths, having had a day or two's partial bathing out; last night in the hospital his head was packed with a wet towel, and this morning after a sitting bath, spinal rubbing, dripping sheet, he is greatly improved, slept well, which he had not been able to do for a long period.—(*This was published six years since, and I can now fully corroborate the statement.*)





Ribber Hall, the property and residence of Mr. George Allen; 600 feet above the level of the River Derwent.

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## Testimonials.

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**T**HE following is a copy of a letter from a Collegian, who had been sadly tortured with physic, blistering, and seton, until he had become hopeless of cure previous to coming to the Establishment, where he soon experienced the good effects of our rational, natural restorative system.

. . . . . "College, January, 1858.

"My very dear Friends at the Establishment,

"It would be ungrateful indeed did I not take the first opportunity of telling you of my safe arrival here.

"After I said 'farewell' to my kind, kind escort, I entered the carriage, and there sat (only changing at Ambergate) dull, flat, stale and

unprofitable to all around me, fit for nothing but to dwell on my severe loss. 'Think of it! To lose you all in one day! I am dull and sad, and what's worse, I don't want to be anything else. I talk mechanically, and because I am to a certain extent compelled to—and smile for the same reason as jocular mutes look dull at a funeral, because it's usual to do so. I arrived quite safe at the . . . Station, and for fear of hurting my foot, rode to the College, although it's close by, so you see I am beginning carefully.

"I was welcomed very warmly by four of my brethren who had arrived before me, and after a short chat, paid my inaugural visit to our Principal, whose house adjoins the College, and who received me very kindly, and will I think modify the number of my studies to suit my still slightly valetudinary state. After a long conversation with him, (during which I did not forget to land Hydropathy and Matlock Bank) I came and had some tea, and oh! what a contrast to my late 'evening meal' along with you all; then indeed I missed you, but I was somewhat comforted by thinking that perhaps you missed me too.

"Oh! for a land where there are no partings,—where friendships once formed, are formed for ever,—ever the same,—ever true,—and such a land there is,—

'—— a land of pure delight,  
Where saints immortal dwell.'

Wednes'day Afternoon.

"I wrote thus far last evening. This morning I have been busy unpacking and putting my bed-room in order, and often did my thoughts recur to Matlock Bank; every now and then something or other turned up and drew my willing thoughts to one or other of you.

"But now I am sure I have written enough about myself, how are *you all*? I hope you are all improving, and yet that so hastens the time of departure and separation, that it mars very much the pleasure of a recovery.

"I long to hear of you, but I suppose that I must not expect that until I write more directly and individually, which I hope to do soon. I wondered last evening what you were doing, how the recesses were occupied, who was reading, and what was being read; but I don't doubt whatever it was you were enjoying yourselves, and permit me to say, if you were not you ought to be in that happy happy place.



" Good bye. Pray accept my kind love; if that be too familiar for any, let it be kind regards.

Believe me to remain,

Very sincerely yours,

."

I received the following gratifying testimony to the soundness of our natural restorative system a few days since. The writer, age 45, was paralyzed on one side, and one leg all but entirely useless; stomach, liver, and bowels, all sympathising with the lowered vitality of the limbs, were in a bad state. The writer has long been restored to perfect health, and his spirits raised proportionately from the prospect of being a cripple and gradually sinking, to his present enjoyment of life and health.

" *L . . . . Cottage, L . . . . . January 4, 1858.*

" DEAR SIR,—After a long interval, though I have had many thoughts of you and the long-to-be-remembered *Bank*, I again beg to break upon the silence.

" I am, thanks be to grace and God's goodness, together with the secondary cause, *Hydropathy*, in very good health—though weak from the former effects of fifteen strokes of paralysis within the space of one fortnight. My leg, too, from which I suffered so much twelve months ago, has ailed nothing since, unless perhaps being more susceptible of cold. My doctors who attended me eighteen months ago, and who told me then they could do no more for me,—that I had better put my house in order, for I might die any moment,—now say they never saw me look better, neither do I think they ever did! God has blessed, and *does* bless the means under your kind direction to me and my family's joy and comfort, and I assure you I never cease to recommend the *Bank* and the treatment there pursued.

" Our dear Miss C . . . . ., from whom I received a letter to-day, and myself, never forget in our correspondence The *Bank*, its proprietors, and the then inmates: if any one with you known to myself I beg a kind remembrance, to managers and bathmen, &c.

" My wife is a confirmed hydropathist.

" Our kind regards to dear Mrs. Smedley and yourself.

Yours very truly,

" *J. Smedley, Esq.*

*J. V. C. . . . .*"

TESTIMONIAL TO SUCCESS OF HOME TREATMENT TO CHILDREN.—“J. Smedley, Esq., Dear Sir, As the benefits of the hydropathic treatment cannot be too extensively made known, I beg to forward you the following case. A few weeks back, on arriving at home, I found my youngest child, a girl of three years, suffering from a severe affection of the chest: breathing exceedingly quick and heavy. We retired to bed, but not to sleep, and passed a wearisome night. The following morning finding the child worse, I applied hot fomentations, and afterwards the chest compress as prescribed in your work on ‘Hydropathy.’ Finding the head very hot, I laid a wet cloth upon it, which gave considerable relief. I repeated the fomentation during the day, and also before going to bed at night without any visible signs of improvement. About one o’clock the child appeared much worse, which caused my wife to feel somewhat alarmed that we had not called in medical aid; however we got up, and again tried the fomentation and re-wetted the compress, and again went to bed. In a short time the child fell asleep, her breathing became much easier, and she slept for about four hours. Rose in the morning, and ate an hearty breakfast, and in an hour afterwards was seated at the table amusing herself with some books; and before the day was over was playing about the room. On Christmas Day another of my children appeared as though she were about to have a similar attack. Before going to bed I gave her a fomentation, and put on the compress. In less than a quarter of an hour the breathing was easier, she was sleeping soundly, and passed a night of undisturbed repose, and rose in the morning quite well. Without wishing to cast any reflection upon the faculty, or their mode of treatment, the probability is that had I called in a medical man my children might have been laid up for weeks, have been brought exceedingly low, and at the end of all, a long bill to pay, which is anything but the most pleasing part of the business. With best thanks for the knowledge imparted in your little book, I remain, dear Sir,

Yours truly,

“Derby, January 11th, 1858.

.....”

The following enquiry addressed to me is a striking corroboration of the remarks I have made of the treatment of cases like the one below, by the old practice of physie. Such a case could not fail being restored under our treatment.

"Mr. H. . . . about 59 years of age, rather under middle height, stout but not unwieldy, full florid face, short neck, habits and manner of life steady and regular, his occupation (manager in a very extensive cotton mill) employing his brains rather than his limbs, is now threatened with apoplexy. He had the threatening symptoms some years since, but the doctor managed to ward it off. Three months ago his symptoms returned, the most apparent being a stammering and difficulty of speech, his feet cold, and his head having a sense of fullness. The doctor applied eight leeches to the head, and I think a mustard plaster to the back of the neck; also, I believe, mercurial pills. He became somewhat better, and was recommended to go to Blackpool, where he remained three or four weeks; he returned home apparently better, and after remaining at home a few weeks, went to Buxton for two or three weeks, and came back about as well as when he returned from Blackpool, but certainly no better. Before going to Buxton the doctor tried to put a seton in his neck but could not on account of the great loss of blood which could not be stopped while the seton was in the neck. He came back from Buxton about three weeks ago. He is now threatened more imminently I think than before. His speech is worse and his eyes heavy. The doctor now intends to open an issue in his arm, and he has at present a blister on the back of his neck. Now can Mr. Snedley do anything for him if he comes to Matlock; and would it be prudent to remove him from Ashton to the Bank in his present condition?"

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The following is from a physician to a patient he sent to my Establishment, and is an encouraging testimonial to the efficacy of our treatment.

Dear Sir,—Your letter and the enclosed stamped envelope are before me. I really see no meaning in my copying my own previous certificate, which has already served its purpose. Moreover, that my copy is to be a copy of your copy.—This is trifling, and I must not waste ink over it. Well: but I do, nevertheless, send a certificate of a kind, and which is one for your best interest, and that is, that I am of decided opinion that an important opportunity is now in your hands for attaining a certain most desirable point of your life—that of physical efficiency for your duties as a minister of the glorious Gospel. My present certi-

ificate amounts to my conviction that your best thing to do is to follow entirel , as you have done whilst under my care, the directions of Mr. Smedley. Without entering into any question as to the merits of his system of treatment as a system, I am quite certain that it is specially adapted to meet the exigencies of your case. Indeed, I do not know of any other practitioner of the Water Cure from whose treatment I should expect so much permanent benefit as from his in your case. Remember that a great fault of your present bodily constitution is that of irritation and debility within, and I know that his treatment is especially calculated to correct that, by keeping up a due action on the external surface without risk of overdoing the thing—as is the case with those who are out-and-out Cold Water Cure doctors. I do seriously advise you to remain as long as possible, and put in force your wonted decision of character; you will never again be under such favourable circumstances for regaining your former physical power. Go on and prosper in your present treatment.

Yours sincerely,

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INTERVIEW betwixt one of my cured patients and his former doctor, who had declared the case hopeless.—“I think I did not tell thee how savage Dr. ——— was with me at the sale. Almost the first words he said were, ‘Well they are about to prosecute your friend Smedley, I understand.’ Indeed, I replied, what for? ‘I don’t exactly know, but it will be for his mal-practice in medical treatment no doubt.’ What were the particulars of the case? I enquired, ‘Oh, he did not know,—but he saw something about it in the *Derby Mercury*.’ I asked if it was not something about the parsons, he saw in the paper. He said, ‘Well, perhaps it was; but,’ he added, ‘if they don’t, they ought to do,—for if such goings on are allowed with impunity, what will become of the properly qualified medical men?’ I left him to solve that question, not feeling particularly anxious about what is to become of the cast off allopathists. They can do as the guards and coachmen did when the railway system was introduced—seek some other occupation,—but I did not tell him so.”

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CASES.—*Walter Yates*, Holloway, about thirty-five years of age, last stage of typhus fever, given up by his medical attendant, when he



began with Hydropathic treatment at his own house, had constant sickness and purging; in one week appetite good, and in a few weeks restored to perfect health. *William Bunting*, Lea, rheumatic fever in a severe form, all pain discharged in a few days, and in a fortnight came to the works; a second attack, from imprudent exposure too soon in cold weather, as soon cured, and has been since entirely free from rheumatism. *Mr. Ralph Smith*, Crich, severe case of inflammation of the liver, for which he was under medical treatment, and confined to his bed, began with Hydropathy on Sunday afternoon, on Monday forenoon left his bed, and was soon relieved entirely, and remains well. *William Aldritch*, discharged from Sheffield Infirmary, chronic, rheumatism in the back and legs, and unable to walk without a crutch and stick, in nine days returned to his work, and left his crutch as a memorial of his recovery. — *Knowles*, of Hearthstone, Matlock, from rheumatic fever, unable to work of two years; long under medical treatment, no relief, could not raise his hand to his head when he commenced with the treatment; in one week restored, and has ever since been free from pain and at work. *Thomas Hodgkinson*, Holloway, severe inflammation of the lungs, pulse ninety to one hundred, severe stitches on drawing his breath; perfectly cured, and returned to work next day. *Thomas King*, Matlock Bank, pensioner, about fifty-five years of age, had a stroke which nearly deprived him of the use of his side, and could not move about without a crutch or stick, and then only a few yards; after a short application of the packs, douche, sitting baths, and cold water applications, he could walk any distance, and his bodily health is now quite restored. He has come over expressly to request me to state his case in this work, for the encouragement of others similarly afflicted; his gratitude is unbounded. I have had several such cases, and with all the treatment has been perfectly successful. *Phineas Davis*, Matlock, Bank, severe affection of the liver and chronic rheumatism, bent nearly double when he came to the hospital, had no natural sleep for nearly two years, liver and bowels, in fact, almost paralysed, in one week slept well, appetite good, and in a few weeks commenced work at my mills, and has ever since gone on well, and never any occasion for medicine.

A remarkable case has come under my treatment since the foregoing was written. — *Mowbray*, of Lea, severe case of *lead cholic* from work-

ing at lead smelting works. He was cured rapidly of a former attack at my hospital, and being unwilling to give trouble he did not apply the second time. Hearing of the case I sent a carriage for him, he was suffering greatly from constant and severe pain in the bowels, and had been so for several days; could not get the bowels to act. First he was put to bed, and the bowels fomented with hot water for half an hour, then put into a wet pack, and after laying an hour taken out and washed in a shallow bath with cold water, or dripping sheet. The pain still continuing, the whole process again repeated. Pain in a great degree gone. Evening sitting bath sixty degrees ten minutes, body bandage double usual width, so as to cover both stomach and bowels, wetted and wrung out of cold water, and kept on night and day, before morning bowels acted. Next morning, first a fomentation twenty minutes, and then wet pack followed by cold shallow; in four hours a hot bath, 100 degrees, fifteen minutes, then put into a cold shallow for one minute, and well rubbed, especially over the bowels, and some cold water poured down the back. Replace the body bandages, wetted in cold water; pain to-day entirely gone, bowels acted naturally twice, and only a feeling of soreness left from the hot fomentations. Next morning cold wet pack, cold shallow after, at eleven cold shallow without fomentations. Three o'clock afternoon a vapour bath and cold shallow; slept well, and next day well. The last attack but one he was under medical treatment nine weeks.

**TIC DOLOREUX.**—I have had a case of a very severe kind under treatment at my own house. The gentleman is in her Majesty's service, and returned from Bermuda six months before. He was invalided by the Medical Board for neuralgia, and came to England and passed the Medical Board at Chatham, who confirmed their decision. He then came to Matlock, all the time liable to paroxysms of pain, which had haunted him for the last twelve years; but the last year or two had become so frequent and severe as almost to deprive him of reason. He could seldom get an hour's sleep night or day, and never for the last five years without taking large doses of anodynes or stimulants. Had the greatest difficulty to take any solid food, and sometimes for days dared take nothing but liquids, from fear of the violent paroxysms of pain which the act of taking food brought on. He had heard of my practice and called upon me; after some conversation on his case,

I invited him to our house, thinking there might be a possibility of some relief, but without much hope. I put him on my dietary, and then commenced active treatment. Seven in the morning sitting bath ten minutes, then the shallow and small douche; then, before coming out of the bath, the large douche on spine and shoulders, wearing body bandages night and day. About half-past nine walked to a spring about a mile off, where he took off his shoes and stockings and paddled in the stream to the ankles five minutes, and afterwards poured water on the head, and then returned and had a wet pack, varied by vapour bath or spirit lamp. The latter repeated several days together gave most relief. Four p.m. sitting bath and spinal rubbing fifteen minutes, varied by vapour bath or spirit lamp; being middle of summer I could give active treatment. Six p.m. a head bath twenty minutes, sponging the forehead at the same time. Drank five tumblers of water per day by sips. Wore a towel dipped and wrung out of cold water during the night, and as much during the day as convenient. In ten days he slept well without once being disturbed with pain in the night, and in five weeks was entirely free from it altogether. Cold weather is by no means unsuitable, but the treatment has to be modified. My former patient is now in excellent health, perfectly free from the complaint.—(*It is now five years since this was written, and the subject of it continues in good health.*)

THE ACTION OF DRUGS on the human system is so infinitely various, and leads in practice often to such complicated results, that the science of medical practice cannot be reduced to any certain rules of application. For, while one prescribes tonics for the first stage of fever, another prescribes emetics and purgatives; and it is notorious how much medical men disagree in the application of drugs to cure different diseases. The drug or physis system, commonly called Allopathic, is entirely based on administering ingredients to force the nervous system, or to alter the constituent parts of the blood, so as to make it in a proper state to afford nutrition to the body; and the science and skill of one medical practitioner over another, is shown by his superior judgment from symptoms, what natural and healthy properties the blood is deficient in. Now, seeing it is only by symptoms—by the pulse, tongue, secretions, &c., that he is able to judge, it must be clearly apparent how difficult it must be for a medical practitioner

to judge correctly, and tell to a nicety, what the blood requires to bring it to an exact proper state, and the exact proportions, seeing he can only guess at it. A single dose of medicine, or a few improper meals or liquids will alter it. Hence the causes of the change of medicine; first trying one composition formed of a variety of extracts, compounds, &c., and then trying another, until the poor injured stomach rejects all, and nature works a cure. It may not be known to all, that no addition is made to the body but through the blood. All the flesh, bone, muscle, &c., is formed from the blood. A little study of the outlines of physiology, and the actions and functions of the body, will make it very apparent that all matter foreign to the aliments the body is adapted for, causes great derangement of the numberless minute vessels contained in the body, and the system is not at rest until the drugs have been expelled from it.

**IMPORTANT TRIUMPHS OF HYDROPATHY.**—While I am writing this I have the pleasure to record the entire success of our treatment to two ladies, who having, about eighteen months since, undergone most formidable and excruciating surgical operations in premature child-birth, which brought them to the brink of the grave, and having the declared convictions of some of the Faculty of the highest standing in London, that a similar operation would be necessary in case of pregnancy, placed themselves under our treatment. They have each been delivered of remarkably healthy children, without any more than the ordinary suffering in such cases. The first was confined some months since, and owing to the excellent state of health our natural restorative system placed the patient in, is becoming remarkably stout. She has christened the infant *Hydrantha*, or *The Water Flower*. The second is doing exceedingly well, and has a son and heir, the first living child the parents have had. These children will, I have no doubt, grow up strong and healthy. They have not had a particle of any drug circulating in their blood before they were born, and moreover, the parents were so thoroughly healthy by seven or eight months of mild treatment, and abstinence from all stimulants and physic, that they afford the purest nutriment to their offspring. Thousands of permanent invalids owe their miseries, and their ill-developed frames, to the nasty drugs imbibed into their system through their parents before they even saw light. References can be given to the cases named above.





The Heights of Abraham, seen from the Hydropathic Establishment, Matlock Bank.

## The System of Hydropathy, Crisis, &c.

THE system of Hydropathy, Crisis, &c., is adapted to draw out the obstructions and impurities which may exist in the system, where nature has designed they should be drawn out, namely, through the pores of the skin and the lungs. It is true, febrile medicines, and James's Powder, with others of a like nature, and also calomel, blue pill, &c., produce a somewhat similar effect; but it is forcing the system, and the after consequences are often very difficult to overcome, as they know who have taken much physic. Hydropathy, by gently withdrawing the impurities through the skin, relieves the system in a wonderful manner; and hence the immediate relief often obtained, because the different organs have not to wait for the gradual recovery of strength, but go on at once to call for new materials to supply their wants. I will now state the principles of Hydropathic practice. The air cells in the lungs, and the absorbents in the bowels, take up, from bad air in the first, and improper food in the latter, matter which is not applicable to the uses of the body. And how is this to be got rid of, seeing it cannot again pass into the bowels?

The pores of the skin (about 2,400 in every square inch), the surfaces of the air passages of the lungs, and the liver, the kidneys, and absorbents, are the organs to relieve the system of useless or worn out matter, or to get rid of the physic with which the body has been saturated. If the pores of the skin are not kept in a healthy clean state, by proper washing and exercise, the consequences may easily be seen. It is like turning a stop tap and sealing up the passages. The waste of the body, and the separation of the impure parts of the blood still goes on—nothing save death can stop the wonderful laboratory within—the matter cannot escape fast enough—and the consequences are, fever, inflammation, liver complaints, bowel complaints, nervousness, hemorrhoids, stomach complaints, &c., from the suffering organs which are crying out for relief. And if the proper channels be not opened, death is the result. Now, Hydropathy provides a soothing, natural, and easy remedy for all this, without expense, and only at the cost of a little personal exertion.

It will be easily seen how important it is to keep up the vitality of the skin and internal organs by proper clothing in winter; cold closes the pores, keeps in the morbid matter, lowers the power of the lungs, liver, stomach, bowels, and kidneys, by driving the blood from the surface of the body on the internal organs. Scarcely one patient comes to my Establishment in winter but with their cloth clothing fit only for summer. I can make no progress whatever with their cases until properly clothed; and I have found it necessary to keep some suitable cloth ready to be made into garments by the neighbouring tailors.

**PRACTICAL HINTS ON THE WATER-CURE.**—The principle upon which Hydropathy acts in curing is, by the simple means of baths, removing morbid matter, stimulating the circulation, and replacing worn-out tissue by new and healthy formation, and causing free action of the millions of pores in the skin, which act as outlets for the sebaceous glands in perspiration, and as absorbents of air to assist the lungs in oxygenizing the blood.\* The accomplishment of this important work being performed by such simple natural means, (and which alone can accomplish the end in view,) cannot be done without patiently waiting the operation of nature's immutable laws. All forcing, either by physic or strong water treatment, only defeats or defers the cure. If any persons submit themselves to the Hydropathic treatment, who have serious mucous inflammatory action of the viscera, or have much

\* See Dr. Gully on this subject, at page 208. in this work.

morbid matter in their system from paralysis, old inflammatory attacks, &c., &c., under the idea that two or three weeks' active treatment will restore them, they will be much mistaken, for probably by that time they will be in an *apparently* far worse condition than previously, and may be from crisis quite laid up.

If health only partially deranged, a short time and no crisis, will well repay the time and trouble of a short trial, and will give important information for the remainder of life.

Crisis (boils or eruption) cannot be produced by any Hydropathic treatment or bandages in a healthy person, and just in proportion to the amount of disease, so is the amount of crisis. Some patients who have not much the matter, may have a slight rash, or a small boil or two; some none.

As I have observed in another place, the body may be in a very disordered state, simply from weakness of the digestive organs, and the *vis vitæ*, or power of life, not being sufficiently strong to cause the proper chemical change in the food after it is dissolved in the stomach, acidity follows, and afterwards, fermentation; this undigested matter is taken into the system, building it up with morbid materials, which, if the body is not placed in favourable circumstances for throwing off, disease and death terminate existence. If patients wish merely to have their general health improved without caring to be thoroughly well, they should not be anxious for active treatment, nor wear bandages; still the good air, water, and regular habits at an Establishment, often raises the power of life, and stimulates the body to throw off diseased matter, even after the return of the patient home; but such an effect is always, and inevitably beneficial in the end.

The principle of the water cure is to raise the power of life by natural means, and just as a wound throws off its matter and seals the dead destroyed tissue, and little by little, forms new granulations, so must morbid matter be thrown out where it exists to much extent; and this is the only way, and the only principle nature acts upon in curing. It is easy to swallow medicine, and more agreeable for the patient not to leave home and business; but this inevitably leads to an accumulation of vitiated matter in the system, that not only often prevents the necessity of putting the patient to the inconvenience of leaving home, but takes him out of the world altogether.

Dr. Macleod, of Benrhydding, after detailing some remarkable cases of shattered health from this very cause, and the subsequent recovery of the patients after the perceptible extraction of mercury, aloes, colocynth, &c., from the body, gives indisputable evidence of the extraction of mercury, which had been taken some years before. While such drugs as aloes were extracted tangibly, and washed out of the compresses that had encircled the body, and making the patient's room offensive with the distinct vapour of the aloes.

I think this explanation necessary from several patients after coming to my establishment with extensive derangement of the whole system, red tongue, parched lips, constipated bowels, dizziness, languor, &c., and without informing me they only intended staying two or three weeks at most, and being anxious to take all the baths prescribed, have, at the close of that time, or soon after arriving home, found themselves quite unable to attend to any business from crisis, and being without the proper applications, have suffered much inconvenience.

Such a course is in fact much like patients with fever, or erysipelas, rising from bed in the midst of it, and declaring to the doctor they must go to business, and will take no more physic; that in fact their business calls them, and they are compelled to go. The allopathic system, however, generally effectually prevents this, because, as one of my surgeon friends remarked; they have to begin with pulling down before they can cure; also adding, "your hydropathy begins by building up from the first," which is the case, as the internal organs immediately respond to the natural healthy stimulus given, and the sufferings from crisis are always accompanied after the first few days, and often before, by a good appetite, and general feeling of vigour and lightness. There is no danger with crisis if the most ordinary care is taken, and all stimulants avoided, nor leeches, lotions, or ointment applied. *No cure can take place in chronic cases without crisis.*

Another point it is necessary to inform patients upon. None go to hydropathic establishments without a cause, and that cause is more frequently than otherwise the inability to find remedies for their ailments elsewhere. They come in a state of nervous irritation which gives them a false idea of their real strength, and when this begins to be subdued, the body being brought to its natural state, a feeling of lassitude and weakness is the natural result; but this disposition to



rest is one of the most favourable symptoms they can have, and is the preeursor of renewed vitality, where it is not caused by outrageous treatment.

One more observation as to crisis.—Many who come to my Establishment cannot stay for a considerable period, and rather than they should lose the benefit of the treatment, I give in some cases more treatment but of a mild kind to produce crisis (without which they would not benefit) than I should do if they could carry their treatment over a longer period; but in this there is never any risk. I wish, however, thus fully to explain what patients with chronic disease have to expect by putting themselves under hydropathy.

The following observations on crisis are from the Work of a celebrated American physician, and of others.

One most remarkable feature in the water-cure, is the Crisis, as it is termed. It is said that at Graefenberg it is really amusing to observe with what anxiety it is looked for by the patient. In most cases it proves the certain harbinger of a good cure. "The patients themselves are constant witnesses of this fact, and it is no wonder, therefore, that they should look forward with pleasure and hope to its advent in their own persons. A patient is no sooner missed from the table, than the question goes round, 'Has so-and-so got a crisis?' And if the reply be in the affirmative, the report spreads like the news of a fresh victory, and his friends assemble round him—not with long faces to condole him—but with merry smiles, and laughing jests, to congratulate him on his happy fortune." "The following allegorical lines from Southey," says Capt. Claridge, "might with great justice be literally applied by the individual who has passed through the crisis, and been restored to health:"

"Most blessed water! Neither tongue can tell  
The blessedness thereof, nor heart can think,  
Save only those to whom it hath been given  
To taste of that divinest gift of heaven.  
I stopped and drank of that divinest well,  
Fresh from the rock of ages where it ran;  
It had a heavenly quality to quell  
All pain. I rose a renovated man;  
And would not now, when that relief was known,  
For worlds the needful suffering have foregone."

"The crisis is generally ushered in by a sense of uneasiness, a loss of sleep and appetite, an alternate change from heat and cold, and lastly by all the symptoms of fever, which is sometimes violent, but always of short duration, if properly attended to. At its termination, the alvine and other evacuations are more plentiful, and accompanied by a more copious separation of extraneous matter than ordinarily; sometimes by several of the excretory passages at the same time. This increased secretion is generally accompanied by a variety of eruptions of the skin, such as boils, &c.

"The term crisis applies to any very marked disturbance of the system, or cutaneous change; as the crisis fever, odorous perspiration, odorous urine, vomitings, diarrhœa, hæmorrhoidal discharge of blood, and various kinds of eruption on the skin."

"In very many cases of cure, there is said to be no perceptible crisis of any kind. There appears to be no very general rule respecting it. In some old and obstinate cases of gout, mercurialism, &c., it may take place as many as from three to five times, before the cessation of the disease, and the re-establishment of perfect health."

*The "Crisis." By Sir Charles Scudamore, M.D.*

"The very important matter of *crisis* is always sought for with much solicitude both by Priessnitz and the patient. He believes that it could not be produced in a healthy man; and that its occurrence is a sure proof that nature is successfully exerting herself to throw off the disease, by the exit of a bad humor from the mass of blood. It is a sort of wholesale theory, and equally serves for all persons, and for every known disorder; and assuredly is the most convenient for one ignorant of medical science. I conceive that Priessnitz must have been gradually led to this idea of morbid blood by the observations which his experience enabled him to make; for, as before explained, he entered into the water-cure practice\* by accident, and not from tuition. His principles have arisen out of practice as an empiric art, and were not as a precursor first implanted in his mind. He has, in innumerable instances, (so that the contrary forms the exception to the rule) witnessed the formation of crisis in the progress of the water-cure, amongst which boils take the lead in pre-eminence and importance of character. But

\* I employ this term in its just signification, meaning experience, not charlatanism, from which I believe Priessnitz to be entirely free.

the term also applies to any very marked disturbance of the system, or cutaneous change; as the crisis fever; odorous perspiration; odorous urine; vomitings; diarrhœa; hæmorrhoidal discharge of blood, and various kinds of eruption on the skin. It was a fact of ordinary occurrence, presenting itself to the mind of Priessnitz, that the great crisis of boils, in proportion to their free suppuration, proved in the highest degree remedial, removing chronic pains and internal sufferings of long standing; and that no marked amendment did take place until the event of some crisis. Also the additional fact must be mentioned, that very frequently indeed the boil crisis would appear in the immediate vicinity of the disease, sometimes on the very spot. It is no longer surprising therefore that the idea of humour in the blood should be strongly confirmed in the mind of Priessnitz, and have grown with him into a rule of practice. The patient very naturally cares not for the absence of scientific explanations, but renders his faith to fact, and to the long list of very extraordinary cures which have been performed, after the failure of regular medical art. But it will not be uninteresting to examine more closely this doctrine of the bad blood, with reference to crisis and treatment.

“In the case of morbid poisons, as, for example, small pox, measles, and scarlatina, nature evidently makes a vigorous effort to free the blood from the virus, by producing in the skin a characteristic eruption, attended by a symptomatic fever. After a certain period, health returns, and no reminiscence of the poison occurs. I adopt this illustration to shew the blood can in this manner, by the medium of the skin, clear itself of the offending cause, however difficult the explanation may be. In the very familiar examples of cutaneous disease, as erysipelas, the shingles, nettle-rash, &c., we commonly refer to the blood as the source of disorder, although we can only generalize our notions; or, by other theory, we may regard these disorders as the offspring of some internal vitiated secretion, as acrid acid in the stomach, or bad bile, affecting the skin by supposed sympathy;—which is equally figurative language, if we are driven to close and searching analysis.\*

“Boils and carbuncles do not occur in healthy subjects; and when they happen naturally, are always looked upon as indicating a bad habit

\* A breaking out, as it is called, on the lips and chin, would probably be produced in any one by eating, for a continuance, rich sauces, especially if made with bad butter.

of body. The surgeon may choose other description, and call it weak and unhealthy inflammation, affecting the outward texture of the body, differently from phlegmon or true inflammation. I will not, therefore, for the sake of language, attempt to dispute the plain notion, so familiarly adopted, of the nature of crisis in the water-cure treatment: but I do think it of great importance that it should have its sober limits, and not be made an *ignis fatuus* to the practitioner or the patient. The benefit arising from crisis must not be referred merely to the depuratory or cleansing process for the blood. Boils and rashes act as counter-irritants, in the ordinary and most accepted view, and in this way also prove useful; on the same principle that we see advantage derived from blisters, and artificial eruptions produced by external applications, tartar emetic, croton oil, &c.: and even the use of setons and issues is connected with this principle of counter-irritation equally with the idea of discharging the offending humour from the blood. It is very evidently the formation of an artificial disease, with the hope that it may be a substitute for the real one, and cause its removal.

"It certainly happens in this way that much inconvenience must often be sustained by the patient in the progress of his cure; and he must submit to be worse, before he can be better.

"The occurrence of boils is not, however, invariably necessary to the cure. Nature determines this, and may give another kind of crisis; and even none that is notable, may be the pleasing fate of some, who still receive every benefit and recover.

"From all that I have seen, and my opportunity has been extensive, I am deeply impressed with the conviction that the employment of a very large amount of treatment, at one and the same time, in order to urge the circulation to produce crisis, demands most prudent consideration, and especially in irritable constitutions. I am free to admit that, in chronic cases of long standing, superficial measures would be of little or no avail, and that there must be efficient treatment. If too active measures be pursued in these exceptionable instances to which I allude, a sudden and too severe crisis might be produced, creating high suffering and possible danger. Instead of the favourably suppurating boils, such as are of untoward character might arise. I am sure that these unfavourable consequences may always be avoided by ordinary care, and do not belong to the water-cure treatment, as of right, more than



any accidental untoward result belongs to the regular practice of physis."—*The Crisis*, by Sir C. Scudamore.

OUR TREATMENT OF CRISIS.—On rising take a little soap and hot water, and with a gentle hand and flannel pad, well wash all matter away; then apply a dry piece of linen over the part affected, and nothing more.

If very *irritable* in the day, undress and quickly sponge the body over with water at sixty-five degrees, and re-dress as above,

If *smarting*, then apply the water at eighty degrees.

If *burning*, then apply a very gentle warm fomentation, and re-dress as above; *no sponging after*: any cold application will increase the irritation. Have a wet pack if feverish, for half an hour.

Bedtime.—Take off the linen and put on body bandages (usual calico and oiled silk) *well wet* in water sixty-five degrees. A little hot water should be kept by the bed side, and if unable to sleep, the above process should be renewed. If too delicate to have the body bandage so wet at night, then keep the wet linen on, with a piece of new flannel over. Abstain from flesh meat until the crisis is well out, and drink pretty well of cold water. Do not keep the body too hot.

When the crisis, from much inflammation in the body, does not subside with the above applications, the patient had better keep in bed, throwing off all bandages, with as light covering on as possible not to be cold; and have the parts affected sponged over with warm water every hour. This is the speediest way of getting well. Persons are liable to make the crisis worse by rubbing the parts. No flesh meat while crisis is on. Any boils that do not break when they show that matter is formed may be lanced, and a wet piece of linen kept on, and renewed often, and the matter sponged out. Care must be taken to prevent any of the matter or moisture touching other parts. Cases have occurred, where patients have returned home before their cure, of boils appearing, but not coming to a head, and leeches have been applied to reduce the inflammation; this is highly injurious, and stops nature in her work. Stimulants have also been given under the idea of keeping up the strength,—this invariably adds to the inflammation and irritation. Some boils appear to be coming on, but stop, and go back; but this effects the purpose, as the matter is taken up by absorbents in coming out of the body.

The following quotations are from Dr. Gully's Work, "*The Water Cure in Chronic Disease*," (London, Churchill, and all Booksellers, 2/6.) a work containing a mass of important information not only on the Water Cure, but on the whole structure and functions of the body.\*

"DISEASES OF THE COLON—CONSTIPATION.—On no subject of medical concern is there more misconception and prejudice among the laity, than on that of the depuratory office of the bowels. And no wonder; within the first twenty-four hours of mundane existence an aperient drug is introduced into the digestive canal, and that irritative action, thus commenced, is looked on as necessary to the well being of the individual, by those whose office it is to watch over his younger years. By the time he has reached the years of self-guidance, the same necessity is impressed on his own mind, both from the mental habit, and from the organic craving of the lower bowel itself, for the daily or weekly excitation of the aperient—a craving which induces a sympathetic one in the brain, which *will not* be satisfied until the old irritant is applied to the old spot. No matter how perfectly well the person may be—appetite, sleep, spirits, walking power, in the best order, no pain or ache present, no sense of fulness of the bowels; yet is he haunted by this vision of constipated bowels: all must go wrong, if all be not already wrong, unless his bowels are relieved; they were open yesterday, the day before, and for a year past, but not having been open on this precise day, the worst must happen. How hard, all but impossible, it is to drive into the understanding of patients that all this is error, every man of physiological education can say. It would seem as if people lived to have stools, and not had stools to live. These last seem, with large classes of English society, to be the alpha and omega of earthly existence, the one thing of never-fading interest, the much-loved object of daily and hourly solicitude; all the gigantic efforts of the reasoning faculty, all the empyrean flights of the imaginative faculty are postponed for the elevating function of evacuating the bowels!

\* I have received the following kind note from Dr. GULLY, giving me permission to make quotations from his works.

"Malvern 18th Sept.

"SIR,—I cannot object to you making extracts from my writings, provided they are acknowledged in the text or in a foot note, as is usual. I wish you success in your undertaking, and am,

Your's faithfully,

"Mr. Smedley.

J. M. GULLY."

“ It is sad folly, all this anxiety about the bowels ; and much of it is at the door of the patient who has grown up in it. But the fault is also shared by great numbers of the lower class of medical men, called surgeon-apothecaries, who either do not know the physiological merits of the subject, and act in ignorance, or else are too indolent steadily to resist the patient's prejudice for the patient's good. These, the ordinary attendants of so many families, might do much to abolish this pestilent and intolerably stupid habit and prejudice of purging the bowels—the parent of so many diseases which shorten life, and of so many more which render life scarce worth having. To the non-professional readers of this work I will, at least, offer some explanations concerning the office of the colon, which will show them the uselessness and harmfulness of interfering with it, and also how the *natural, unforced* action of the bowels is the only one which is not harmful to the body.

“ After being formed out of the food by the offices of the stomach and lungs, the blood is passed on to the minutest blood-vessels of all the tissues of the body. In these vessels, the great functions of nutrition and secretion are carried on—*nutrition* depositing the solid parts, and *secretion* the liquid and gaseous. But all the solids, and the greater number of the liquids, are only deposited from the blood for a time—their *status quo* is most transitory. The solids are broken down, and, by the absorption of the veins, again carried into the torrent of the circulating blood. The same takes place with regard to the liquid and gaseous deposits from the blood. Every particle of brain, bone, muscle, sinew, &c., is reliquesfied ; and almost every drop of mucus, saliva, halitus, bile, &c., is re-absorbed, and re-circulated. The chemical elements of all the solid deposits, and of all the secretions, are therefore in the blood.

“ Now, there are certain of these secretions which exist for the purpose of carrying off from the circulating blood chemical compounds, derived from the breaking down and reliquesfaction of the solids of the body. These compounds are called *nitrogenized*, nitrogen being the element they chiefly contain. The elimination in question is effected in the kidneys by the secretion of urine, *and in a portion of the colon by the secretion of the stools.*

“ The object which nature has in the secretion of the stools, is, therefore, to rid her circulating blood of matters which, being no longer of

use for the purposes of nutrition of that body, would interfere with it, if retained in the blood.

“ This is so true, that there are instances in which the colon failing to secrete the feces, the skin has been made the point of elimination to a most disgusting extent. I have myself seen several persons in whom the exhalation from the skin had a strong fecal odour from this cause. Moreover, any one in ordinary health may observe that when, from any cause, a smaller quantity of stools than usual is secreted, a larger quantity of urine is passed, and *vice versa*, nature ridding the blood by one channel when the other fails.

“ The feces, then, are to be regarded as a secretion from the mucous membrane of the colon, just as gastric juice is a secretion from the same membrane of the stomach, the tears from the mucous membrane of the lachrymal glands, the wax from that membrane of the outer ear, &c. In short, their production is exactly similar to that of any other secreted matter of the body; but inasmuch as they are secreted for the purpose of being *thrown out* of the body, they are called an *excretion* more commonly than a secretion. Here I would remark, as I have done in several places before, on the mischief of dealing with *names* instead of *acts*. Because stools are called *excrements*, people get it into their heads that they are always there, in the bowels to be passed off, and *must* be passed off, without the slightest reference to the other effects of the means they use for hastening the excretion, and without asking themselves the very simple question, “ ‘ Whence come all these feces?’ Yet it is one which, properly answered, would have prevented many a mortal malady, and have saved a world of mental and bodily suffering to the crowds of colocynth eaters that are to be found in England.

“ ‘ Whence come the feces?’ Unquestionably from the same source as all the other secretions of the body—*from the blood*; from the blood which circulates in the mucus lining of the colon. Sometimes, there are portions of undigested or indigestible food, such as the skins of fruits, and the husk of oatmeal, mixed up with them, having been untouched by the gastric juice: but these are adventitious, and not an essential part of the stools. These last, therefore, being secreted from the blood, must derive their quantity and quality from the quantity and quality of the blood at the time distributed in the lining of the colon.

“ But as this blood circulates in the blood-vessels which owe their vital



irritability to the ganglionic nervous matter, with which they are supplied, it follows that the faecal secretion also depends upon the condition of the nervous matter in question. As in the other secretions of the frame, the first influence of causes is upon the ganglionic nervous matter, which then alters the contractile action of the blood-vessels of the colon, this, again, altering the quantity of blood in that part, and the consequent secretions from it.

“Thus we see that *the secreting action of the colon depends upon the quantity of blood in its vessels, and the quality of the nervous agency operating upon them.*

“Now suppose that a man has a large quantity of good blood in his whole body, there will be amply sufficient for the purposes of secretion in all parts of that body,—for the faeces among the rest. Such a man ought to have his bowels evacuated once in twenty-four or thirty-six hours, of between five and six ounces of faeces, and he *will* have them so evacuated if he takes sufficient exercise, does not sleep too long, avoids irritating articles of diet, keeps out mental care and overtoil—if, in short, he maintains his ganglionic nervous system in order. *For remark, that when he does not exercise his will in bodily exertion, when his brain sleeps too long, or, on the other hand, when it is over-worked, excess and congestion of blood takes place in it, and the distribution of blood is rendered unequal throughout the ganglionic nervous system—the brain itself representing a very important part of that system. The consequence is that blood being plus in the brain and spinal cord, is minus in the mucous and nervous tissues of the colon; the secretory power of that bowel is therefore impaired; and the patient is constipated.*

“Suppose the same full-blooded person to eat and drink improper things, the same process of congestion of blood takes place in the mucous membrane and nerves of the stomach, which took place in the brain in the other case, with the addition, very commonly, of the brain congestion as well; the distribution of blood is changed, to the detriment of the colon; *and the patient is constipated.*

“The causes originating in the brain, and those which begin in the stomach, which I have just mentioned, are the ordinary causes of *indigestion*, and thus it is that *constipation* forms an almost invariable symptom of that malady in persons who are well supplied with blood.

“But why do the bowels become constipated in those who have *not*

sufficient blood in the body? Simply, because they do not possess enough of that precious liquid for the purposes of *large* secretion. Nature cannot afford it. What little blood there is in the frame she concentrates in the citadels of life—in the two great ganglionic centres—in the brain and in the stomach,—so that *they*, at least, may not want wherewithal to carry on the two great functions of *nutrition* and *sensation*. She thus deprives the outer skin of its blood and perspiration, and the inner excreting skin of the colon of its blood and stools; AND WE FIND MANY A LEAN, PALE, DRY-SKINNED INDIVIDUAL ALSO A COSTIVE ONE.\* If such a man's bowels are opened once in two or three days, it is quite enough; *his blood cannot afford more; he would be injured if he had more.* If, with this general deficiency of blood, the brain be congested by cure, indolence, &c., or the stomach by improper food, this concentration of blood in either of these organs, and this withdrawal of it from the colon, are increased, and *constipation of the most inveterate character is established.*

\* I have had some passages printed in capitals to draw attention to them.



View from the Matlock Bank Hydropathic Establishment.

“ We are therefore in condition to state as follows :

1. THE FÆCES ARE SECRETED FROM THE BLOOD which circulates in the mucous membrane of the colon, under the control of the ganglionic nerves\* distributed thereto.

2. Causes which operate upon the ganglionic nervous system, as it exists in the brain or about the stomach, so as to concentrate blood in those parts, diminish the secretion of fæces by withholding from the colon a sufficient supply of blood for the purpose.

3. CONSTIPATION, THEREFORE, DEPENDS UPON AN UNEQUAL DISTRIBUTION OF BLOOD, TO THE DETRIMENT OF THE COLON, WHICH IS NOT SUFFICIENTLY SUPPLIED.

4. Such unequal distribution may occur in a body *well supplied* with blood, in consequence of irritations of the brain or stomach. And it occurs in a body that is *deficient* in blood, in consequence of a law of the economy which, in such deficiency, concentrates blood in the organs most essential to the life of the individual—the brain and stomach.

“ Now let us take the instance of the constipation which takes place in a man whose frame is possessed of a good supply of blood, AND SEE HOW THE ORDINARY MODE OF RELIEF BY DRUGS FULFILLS THE AIM OF CURE. The purgative drug acts first of all upon the ganglionic nerves of the entire digestive canal, irritating them and inducing an augmented quantity of blood in the blood-vessels of the mucous membrane. The increased mass of blood in vessels which have lost their tone after the first stimulation of the purgative, is, of necessity, attended with increased secretions throughout the canal. Among these secretions are the fæces ; the colon is stimulated with the rest of the canal, although it may be doubted whether simple *mucus* does not form the greater part of what should be the real *faecal* secretion ; FOR ORGANS THAT ARE FORCED NEVER GIVE OUT NATURAL SECRETIONS. Still, the end of passing something out of the bowels has been gained, and the whole man feels better. But when all is over, what is the condition of the nerves and blood-vessels ? Violent stimulation of both has been followed by extreme exhaustion of both ; and as the morbid congestion of the stomach and upper organs of digestion constitutes the basis of the constipation (by withholding blood from the colon), the

\* Nerves of nutrition, not the spinal cerebral.—J. S.

drug, which has attracted sufficient blood into the *colon* to cause faecal secretion, has also drawn more blood into the *stomach*, where too much already existed in a congested state. It has, in fact, inveterated the constipation of the lower organs of digestion, by inveterating the congestion of the upper organs. Hence the well-known fact, that after a purgative, the bowels are more bound than ever; and the more strong the drug, the more obstinate the bowels after its operation. Hence, too, the growing necessity for more powerful drugs and doses; the cause in the stomach being rendered more intense by each succeeding one. TO TALK OF *CURING* CONSTIPATION BY SUCH MEANS, IS LIKE THE PROPOSAL TO EXTINGUISH FIRE BY POURING OIL ON IT: *IT NEVER WAS SO CURED, AND NEVER WILL BE.*

"All this applies when the brain, congested by care and other mental disturbances, acts as a cause of constipation; for it only acts in such a manner by producing the condition of the stomach, which I have mentioned as the basis of constipation. Of course, when both brain and stomach are implicated, the bowels are still more unmanageable. You never see anxiety produce constipation alone: some signs of indigestion are always there as well.

"In the other instance of constipation, in persons who are deficient in blood, the results of purgative medicines are still more futile as regards cure, and still more hurtful as regards the general condition of the body. For only consider, that whilst Nature is hoarding up the little blood she has, in her most vital parts, for their functional support, YOUR PHYSIC IS FORCING THAT BLOOD TO AN EXPENDITURE ON FÆCAL AND OTHER INTESTINAL SECRETIONS WHICH MUST FURTHER REDUCE ITS QUANTITY, and therefore increase its congestive concentration about the stomach and brain; besides further reducing the source whence the faeces come. You thus at one and the same time decrease the blood that is to supply the stools, and inveterate the mal-distribution which deprives the colon of it. How in the name of ordinary reason is constipation to be cured? *It never was so cured, and never will be.*

"No: he who, in treating constipation, has only the colon in his mental vision, will be sure to miss cure altogether. Direct, forcible evacuation from that bowel is all he will think of: he will neither take hints from



antecedent and accompanying conditions of other organs, nor look towards the future state of them, nor even of the colon; and the event will be, that the colon is no better, and the other organs worse. That is the history of *all* cases treated by medicine. And as the constipation increases with the increase of disorder in the upper organs of digestion, so these last involve other parts in their morbid sympathies, until the patient becomes a mere bundle of diseased and painfully acute sensations, the ganglionic nerves throughout every tissue and organ of the body partaking of the irritation, which took its rise in those of the brain, or stomach, or both.

ENTIRE ABSTINENCE FROM ALL PURGATIVES ABSOLUTELY NECESSARY.—“Should not the drinker be taught to bear the present and passing disagreeable for the sake of the future and lasting good? And so in this matter of constipation the patient must fight against the *imagined* necessity for fecal evacuation; he must resist the sensations sent up from the viscera, because, without such effort, he will *never* get his bowels into natural and regular action. Every dose of physic he takes is reducing his blood-making power by further disordering the parts in which that power resides, and therefore rendering more distant the prospect of cure. He must be taught that *no possible harm* can arise from the inaction of the bowels, because, in truth, they have nothing in them. Say that feverishness would arise? But the appliances of the water treatment are especially adapted to keep that down, even were there excess instead of deficiency of circulating blood in the body. The patient *must* begin the self-denial of physic at some date or other if he desires to be *cured*: the shortest date is the wisest, both for himself and his physician. Therefore *the absolute peremptory abstinence from all purgatives, is the first step in the treatment of constipation with deficient blood.* In the other kind of constipation, a dose now and then to satisfy the mental craving may be unwise, but in the kind we are now speaking of, it *mars altogether* the curative aim to take *any*. You may continue the water cure for a fortnight, and then, taking a dose of purgative, you have thrown away those fourteen days: you have to begin again *de novo*: I have seen this folly perpetrated several times. It is only by virtue of the accumulated bulk of stools that the lower bowel and the muscles of the abdomen are irritated to contract and expel them, in the same manner that a certain quantity of urine

must accumulate in the bladder, before this last contracts upon and expels it. But whence is a large bulk of feces to come every day, or even every second or third day, when there is too little blood in the body. Let constipated people in this plight of body be contented to wait until enough is secreted to open the bowels.

**PALPITATION OF THE HEART.—ORGANIC DISEASE OF THE HEART.**—*Heberde's* remark on palpitation of the heart, "*Aut nulla requirunt, aut omnia vincunt.*"\* is more epigrammatic than true, when the water treatment is concerned. Ordinary nervous palpitation does admit of cure by that treatment, and it is of the first importance to cure it. It is only a symptom of irritation in the great nervous network about the stomach, generated by food, by alcoholic drinks, by mercurial courses, by the presence of worms in the digestive canal, by accumulations in the colon, by retention of the menstrual flux, by mental affections,—all acting on the centre of nutrition, whence morbid sympathies are propagated to the centre of circulation, producing irregular action there. Whether such action owns this source, or is attributable to structural disease of the heart, can only be certainly determined by the stethoscope; the "bellows" sound being the characteristic of nervous disorder there. But, after all, the malady to be treated is irritation of the ganglionic nerves at the pit of the stomach. Accordingly, the packing with a wet towel down the front of the trunk, and fomentations of the pit of the stomach with warm, not hot, water, cold sitz and foot baths, are the remedies most employed. Of course, where so great an object as the heart is concerned, it behoves carefully to watch the treatment; in such a case no remedy whatever is safe without minute attention. Thus, the wet towel must be applied as the mucous membrane and skin are more feverish, and in no case continued for a long time together; there should be an intermission of a few days now and then, and mere sponging, water not lower than 60 degrees, should be in place of the cold shallow bath. The fomentations should be only a good degree of warmth, not hot; neither should any part of them touch the ribs, for in either event they rather set the heart beating. The same applies to the compress, which, however, should be often changed, otherwise it makes the heart irritable. The sitz baths at 60 degrees should be taken for half an hour at a time; they always reduce the pulsations of the heart; and the foot baths cause a derivation,

\* "They either require no remedies, or they resist all."

that seldom fails materially to relieve the visceral irritation. In fact, the treatment should be sedative; all vehement reaction should be avoided, since it is necessarily effected by quickening the circulation, which is as necessarily the work of the heart. This is especially the reason wherefore it is improper to drink large quantities of water, which are highly stimulating to the general circulation. I have always directed a large wine-glassful only to be drunk at a time, and not more than from one to two tumblers in the day. To follow the Gräfenberg rule of drinking as much as possible in all cases, would be to verify the accusation which some have brought against the water treatment, that it causes heart disease. Active exercise is also bad. I think it very probable, that palpitation of the heart has been induced by the indiscriminate water drinking, and incessant walking, which are inculcated by those practitioners who, themselves lacking thought, draw all their inspiration from the routine of Gräfenberg. But, with care to avoid all revulsive effects, palpitation of the heart is a perfectly curable malady by the water plan, as I have already ascertained by several cases.—*(Dr. Gully.)*

DOCTRINE OF ACUTE DISEASE.—WHAT IS MEANT BY “GENERAL DISEASE” AND “GENERAL DEBILITY.”—*By Dr. Gully.*—“By the term, ‘nervous system,’ the brain, spinal cord, and the nerves proceeding from them, are ordinarily understood; but there is another system of nerves, which, as it is neither obedient to the will, nor cognizant of pain, commonly so called, is rarely considered in the explanation of disease; in which it, nevertheless, plays by far the most important—I may say, the only important part. This system of nerves has been called the ‘ganglionic,’ (from the appearance of small knots or ganglions in the course of the nerves,) the ‘organic,’ (as regulating the character of the organization of parts,) the ‘nutritive,’ (as presiding over the organs that minister to the nutrition of the body,) and the ‘visceral,’ (as pervading and having its centre in the viscera, that is, in the contents of the chest and abdomen;) and I shall use these terms indiscriminately in the course of this Essay. Perhaps the most accurate, however, are the epithets ‘nutritive,’ and ‘organic;’ for, wherever there are organs in the body, or wherever nutrition goes on in it, there are nerves of nutrition to be found. Wherever, too, there is a blood-vessel, (and we know not of nutrition without blood,)

organic nerves accompany it and regulate its action. In *every* part of the body, therefore, organic nerves exist, as in *every* part of the body blood-vessels exist: the point of the finest needle cannot be introduced into any issue of the frame without entering one or more blood-vessels and organic nerves. The brain itself, containing, as it does, so large a proportion of the blood of the body, is, in this view, supplied also with a large proportion of organic nerves.

"The coincidence of nutritive blood-vessels (called also capillary) and nutritive nerves points to some strict organic connexion between them. In fact, it is the presence of the nerves which imparts to the blood-vessels the property of receiving and re-acting upon impressions from agents within or without the body—a property to which the name of 'irritability' is given.

Let not the reader confound 'irritability' with 'sensibility,' another property of a *portion* of the body. Irritability exists in the blood-vessels and organic nerves all over the frame—has its central organs in the chest and abdomen—begets no sensation or volition—is ever in action. Sensibility exists in the nerves of the brain and spinal cord only—has its central organs in the brain and spinal cord—begets sensation and volition, and is suspended in sleep. But, on the other hand, sensibility and sensation are built upon irritability and irritation; as thus—the brain is composed of matter deposited from the blood-vessels, and these are regulated in the manner and quality of their deposit by the amount and character of their irritability; therefore, if the irritability be excited on vehemently, (as in giving stimulants,) the action of the blood-vessels, otherwise called their irritation, is vehement also, and they deposit more than usual of the brain matter, which possesses the property of sensibility, *and in this way augmented sensation is begotten*. It is important to bear this in mind for the future application to the doctrine of chronic disease—*irritation precedes sensation, sensation is built upon irritation*.

"The first effect, therefore, of causes of disease—excessive cold or heat, infectious matter, &c.—is upon that nervous system which presides over the capillary or nutritive blood-vessels, and whose central portions are in the viscera of the chest and abdomen—the ganglionic system.

"It is ascertained by numerous experiments that the first effect of



all kinds of agents upon the nervously-endowed capillaries is to produce contraction of them—a diminution of their calibre by the fact of their contraction. In other words, all agents are stimulants to them, and bring them into action, and that action is *contraction*. But as all action is effort, such effort must, in a living body, be succeeded by lassitude and exhaustion; and in the case of these small blood-vessels, *relaxation* and increase of calibre is the evidence of this secondary state; and further, it follows that the amount of relaxation will be in exact proportion to the amount of the previous contraction.

“Of course the condition of the blood as to quantity is affected by these two opposite states of the vessels that contain it. When the vessels contract on the application of the morbid stimulus, they drive their contained blood from them; and when relaxation ensues, the blood rushes into their increased calibre; and the amount of blood thus brought into a part will be, of course, in exact proportion with the relaxation, and this with the contraction, of the containing blood-vessels.

“BUT WHILST SUCH ARE THE CONDITIONS OF MORBID ACTION IN THE BLOOD-VESSELS, WHAT CHANGES TAKE PLACE IN THE BLOOD THEY CONTAIN.”

“In the first place, its movement through the blood-vessels of the diseased part is retarded, in consequence of the diminished contractile power of those vessels. There is more or less excess and congestion of blood in the part, an excess which obtains at the expense of other and healthy parts. It is the excess which causes the *swelling* of inflamed parts, their *redness*, their *increased heat*, (the unusual quantity of blood secreting an unusual quantity of caloric,) and their *painfulness*, the pressure of the excessive blood on the surrounding nerves rendering them irritable, although, as I shall have occasion to show hereafter, inflammation of internal parts may exist without pain (in the usual acceptation of the word) and without redness.

“In the next place, the chemical changes that go on in the blood undergo modification, in consequence of this excess and retardation of its movement. This is shown by the increased heat already alluded to; and further, if the inflammatory congestion be not relieved, the blood secretes *pus*—the matter of abscess—either in the shape of a collection called an abscess, or the same flows freely from the surface of a

mucous membrane, forming a bad kind of expectoration, &c. But the chemical changes in question vary endlessly with the diseased part. In the stomach, there is acid instead of insipid mucus and gastric juice; in the liver there is acrid and dark instead of slightly bitter and yellow bile; from the kidneys, acid instead of alkaline secretion; and so on. The most familiar instance of this as a signal of disease is the state of the tongue when the mucous lining of the stomach is disordered. The variety of the secretions there is endless, and each one corresponds with a certain shade of congestion of blood in the membrane that covers the tongue. Judge, then, how numerous are the shades of diseased action in that single tissue of the body!

“Such, then, is the condition of a part when it is in the acute stage of disease. The phases of the process may be briefly stated as follows:—

1. The application of excessive stimulus to the nervously-endowed blood-vessels of the part.

2. Excessive contraction of the blood-vessels in consequence, with expulsion of their contained blood.

3. Exhaustion and relaxation of the same blood-vessels, with consequent excessive influx and retention of blood in them.

4. Diseased sensation, secretion, and nutrition of the part, consequent on the retention of the blood in the exhausted and relaxed vessels, the vital chemistry being, for the time, improperly carried on.

“These phases apply to all acutely diseased parts whatever—from the small pimple on the skin to the most intense inflammation of the lungs or brain. In all, the same stages occur, whatever the exciting cause may be; whether it be the atom of dirt irritating the follicle of the skin, and producing the pimple there, or the rush of cold air into the lungs, irritating their mucous membrane, and drawing excessive blood into it.

“From what precedes, it appears that the intimate vital condition of a part in acute disease is one of debility. The blood-vessels have lost their contractile energy, and are oppressed with blood, which they lack the power to throw off. But we must not, meanwhile, lose sight of the fact, that the organic nerves themselves, whose re-action on excessive stimulus has produced all this mischief, are also supplied with and nourished by blood-vessels; and that therefore they, too, are in a

state implying diseased sensation and nutrition. In other words, they are exquisitely irritable, but their irritability is of a diseased quality, and not sustained, because they are badly nourished by the blood; the result of which is more than ordinary sensitiveness to the causes which first induced the disease, or to any stimulus whatever applied to the part. *Feeble* contraction takes place, then more exhaustion; contraction again, and so on until *all* power is lost. Thus a man gets a slight inflammation of the mucous lining of the windpipe from breathing very cold air: allows the same cause to exasperate it daily by acting on the highly irritable but feeble nerve: and blood-vessels of the membrane; and, finally, induces the most intense form of inflammation of the lungs—a too frequent illustration of the fact, that the most fatal maladies commence in a ‘slight cold.’

DRUG MEDICATION.—“Supposing acute disease neither to terminate in death nor in some complete critical action raised in another than the morbid organ or set of organs, there remains a third termination of it—and that is ‘chronic disease.’

“To this the ordinary mode of drug medication in acute diseases tends most powerfully. I will endeavour to show how.

“A simple inflammatory action of the stomach, being endowed with the name of ‘acute indigestion,’ is treated as such; that *name* is treated, the *inflammation* would appear never to be considered—at least it is charitable to suppose so. For what is done? Three or four grains of a highly irritating compound of mercury, called calomel, are administered, the aim being to urge the liver to pour out its bile. After this has remained in the stomach for a few hours, violently irritating it, and calling to its already gorged mucous membrane a further supply of blood, another kind of irritant is administered, in the shape of a purgative saline draught, the aim of *that* being to cause the secretion of a vast quantity of mucus from the whole digestive canal, and especially from the stomach.

“Now, in this process two things are to be remarked: first, that calomel does *not* stimulate the liver to act, except by previously stimulating the stomach; it acts, and can act only, by extension of irritation from the stomach to the liver; it never *touches* the liver at all—it is physically impossible that it should; and next, that neither the liver can pour out more bile than usual, nor the digestive mucous membrane

pour out more mucus than usual, without more blood than usual being present, whence to derive those secretions. Accordingly, after the double stimulation of the calomel and the black draught perpetrated on the membrane of the stomach, there can be no difficulty in imagining the augmentation of blood in it. *Yet the disorder to be removed consists essentially in an increase of blood in that very membrane!* Yet, again, calomel and black draught do certainly relieve a fit of acute indigestion! How is this?

"It is thus. It is found by long experience that a free flow of bile and mucus from the digestive canal and liver is the kind of crisis which Nature chooses in order to relieve the upper organs of digestion. Autumnal diarrhœa is a never-failing instance of this. And as it is certain that, in acute dyspepsia, those upper organs are disordered, (however uncertain or erroneous may be the precise notions of the disorder,) the attempt is made to imitate the natural relief by expediting it. An enormous quantity of blood is attracted to the stomach directly, and to the liver indirectly; and the vessels containing it relieve themselves by forcing out the bile and mucus in extraordinary quantities. *A forced, false, and imperfect crisis* is thus produced, and all seems quiet again.

"*Seems* quiet again; for it is impossible that such unnatural and vehement stimulation can be applied to the organic nerves of the mucous membrane without exhausting their energy: it is the law of all living bodies; therefore, although the gorged vessels have relieved themselves by their extraordinary secretions, the nerves, by whose energy they should recover their healthy calibre, fail to afford such energy. In this state of things, nothing prevents the accumulation again of blood in the same vessels: the very first meal after the physic may do this, or it may be a day or two of feeding, or a few days of mental or physical exertion—for these, too, are causes of acute dyspepsia. But whatever the exciting cause, this second accumulation takes place still more readily than the first, the organic power of the part having been weakened; and lo! another fit of indigestion, and the same calomel and black draught as before.

"But this time it is not quite so acute in character as formerly. The organic tone of the blood-vessels is diminished, in consequence of the exhausted state of their nerves. The organic sympathy between the vessels and the blood they contain is diminished, from the same



cause; add to which, that in the interval between this and the former attack, the membrane of the stomach has not been in condition to afford strong gastric juice, digestion has been of a character not to make good blood, and the want of this operates on the vessels of the diseased membrane. So that, looking to the vessels themselves, to the nerves which influence them, and the blood that circulates in them, the whole of the morbid organ, or part of organ, is in a still lower state of vitality than before.

“ Nevertheless—and this must never be lost sight of—this diminished vitality in the portion of the diseased stomach is a cause of great irritation elsewhere. The phenomena of headache, fever, &c., are not so intense as before. But although the pain of head, heat of skin, &c., are not such *prominent* signals of the stomach disorder as before, that is because their vitality is diminished; they do not respond with the same vigour and acuteness to the digestive irritation as on the first attack. Still, the mischief, both in the stomach and the brain, and its nerves, as well as the skin, has advanced; their minute action is further than ever from the standard of healthy life. The *two forced, false, and imperfect crises* have left the stomach in a more irritable and more feeble condition than ever.

“ But what of that? Relief has been procured, speedily and with small trouble. Business and pleasure have scarcely, if at all, been interrupted; the only disagreeable has been the taste of the phlegm, and perhaps a little griping of the bowels from it. The patient knows not of, and the prescriber cares not for (if he knows), the small spot of lingering irritation that is left behind, to be again lighted up and again extinguished by forced deluges of bile and mucus, until the stomach itself passes from irritation into disorganizing ulceration, or cancer, and extending its morbid sympathies to the brain, spinal cord, skin, and lower bowels, kills the patient with apoplexy or palsy, or allows him to drag on life, a prey to the miseries of hypochondriasis, to piles and rectum disease, or to an inveterate skin disease.

“ The extension of chronic disease is either *occasional* or *permanent*; and the frequent repetition of the former leads to the latter. Thus *chronic irritation of the liver and stomach* causes occasional flushing of the face and headache—indications of surging blood towards the head—the intervals between which gradually become less and less palpable,

as the establishment of the condition in the head, which causes them, proceeds. It is a sort of warning given before another organ, the brain, becomes permanently involved in the mischief of the one first affected.

“The agent by which this extension takes place is the nervous system; but both occasional and permanent extension may take place without the intervention of *animal sensation*—as when chronic irritation of the digestive apparatus causes a periodical increase of discharge from an external ulcer, no increase of pain or other sensation attending; or when irritation of the stomach acts slowly, but incessantly on the heart, producing therein organic mischief totally unsuspected, until examination after a sudden death reveals the fact of long-standing disease in both organs. Very frequently, the worst cases of indigestion are those which produce no pain, no malaise even, but in which the body wastes in atrophy. The deposit of tubercles in the lungs from chronic disease of the digestive organs, is another, and too frequent illustration of this fact. In such cases, there must still be transmission of sympathy, of sensation; and, inasmuch as the *animal* part of us is not aware of the transmission, save by its results, it follows that the sensation propagated from one diseased part to another, must have been an *organic sensation*, as contradistinguished from an *animal* one.

“Referring to the fact before mentioned, that wherever there is a blood-vessel, or wherever nutrition goes on, there are organic nerves, the explanation of this organic sympathy, or sensation, will be sufficiently clear. The universality of these nerves and blood-vessels in the body renders the extension of organic irritations from one of its organs to others a very ready, and, indeed, an inevitable phenomenon.

“Unless you can find medicines of such character, and in such amount, as, when applied, to give to the blood-vessels the exact degree of contractile power that shall rid them of the blood which oppresses them, *and no more*, you either do nothing or mischief. If the stimulation you thus apply be too small to give the vessels the power in question, not even temporary relief ensues. If it be excessive, which is usually the case, greater exhaustion than before follows, and matters are worse than before. The consequence is, *at the best*, a hap-hazard practice, and, *at the worst*, a mischievous practice—the latter, alas! being the rule; for how is it possible to hit the *precise* stimulus?

“Such is the mode in which the ordinary medicinal treatment be-

comes a cause, and maintainer and aggravator of chronic disease in the internal central organs of life—whence the mischief is propagated to any other organs of the body.



Matlock Bath, from Abraham's Heights.

DR. GULLY ON THE LOWERED POWER OF THE GANGLIONIC NERVES OR NERVES OF NUTRITION.—“ With the deranged ganglionic power, deranged secretion takes place, as we have seen in the stomach itself. But the same holds with regard to the membrane which lines the fauces, the mouth, the tongue, and the eyelids: for it is a continuation of the same which lines the stomach. Accordingly, we find in dyspepsia, either *deficient or diseased spittle*, very frequently thick and tenacious, less frequently thin and acrid—the former in mucous, the latter in nervous indigestion. The spittle also tastes acid, bitter, metallic, sweet, mawkish, &c.; which, no doubt, is owing in part to the disordered sensation of the nerves of taste, and partly to the morbid secretion. Further, the vapour from the membrane of the throat and jaws is more or less foetid, causing a tainted breath; though this symptom is often wanting. For a like reason, namely, the congestion of the membrane in question, dyspeptics are

much liable to sore throat, both relaxed and inflammatory, from variations of weather.

"Following the membrane from the throat forwards, it covers the tongue,—the well-used indicator for the doctor. To go into details on this point would be tiresome, and I shall content myself and the reader too, probably, by stating the general result of my experience of the tongue as a symptom in chronic indigestion :

1. When the tongue is not much, or not at all increased in redness or volume, but has a thickish whitish-brown fur upon it, without any great amount of dryness, we may infer that the stomach irritation is of the mucous membrane, and not of an intense nor ancient character.

2. When the fur in question is slimy, and the tip and sides of the tongue that are uncovered by it present a vivid redness, the dyspepsia is of the mucous kind, is intense of character, and is of longer duration.

3. If, with this last appearance, the fur be yellowish, though more dry, the liver and duodenum are involved in the dyspeptic disorder.

4. When the tongue is clean, but vividly red, with the papillæ at the tip elevated, and of the ordinary moisture, a recent nervous dyspepsia may be predicated.

5. When this red tongue is dry and glazed, a more intense degree of the dyspepsia exists.

6. When the very red tongue has a slight degree of whitish fur, and is enlarged in volume, it bespeaks a very intense nervous dyspepsia, sufficient to involve the brain, which, in such case, is congested.\*

7. The most intense degree of nervous dyspepsia, however, shows a considerably enlarged tongue, the face of which is split into furrows in all directions, so deep sometimes as to give the appearance of several small tongues just holding together by their edges.

8. When nervous and mucous irritation are both intense, and have endured for a long time, the tongue is red at the tip and sides, covered in the centre with a very thin, white, shining mucous coat, and is enlarged. This *silvery* tongue (literally, not figuratively) denotes a great

\* This enlargement of the tongue is so strictly connected with stomach irritation, that the tongue will sometimes swell after each meal, and decrease when digestion is over; in coincidence with the excitement or rest of the digestive organs. Moreover, a process of the water cure will cause a contraction of the tongue for the time, by decreasing the stomach irritation. A medical gentleman now under my care has remarked both these facts, and reported them to me.



amount of long-standing dyspeptic irritation to be eradicated. It is a common tongue with hypochondriacs, especially such as have undergone courses of mercury, and is always connected with morbid action of the brain.

"Other peculiarities of the tongue are its *indentation* at the sides, which implies its *augmented volume*, and pressure against the teeth; and its *tremulousness* on protrusion, which usually indicates nervous dyspepsia, that has involved the spinal cord. But of the signs above-mentioned, one of the most important is the increased size of the tongue, which so often goes unnoticed. Yet have I seen cases of the most distressing indigestion, where the thickening of the tongue was the only sign it afforded, being in colour, moisture, and cleanness perfect; and, what is more curious, in these cases the dyspepsia diminished with the diminution of the tongue, which, however, became *furred* and rather clammy, seeming to show that this latter kind of tongue is that of a *minor* degree of stomach irritation. It is too much the custom to look for fur of the tongue as the only sign of chronic diseased digestion; whereas it is the accompaniment of the least tedious and intractable forms of it; your silvery, or your clean, red, swollen tongue, is far more difficult to manage than the ordinary foul "wash-leather" tongue.

"The *gums and teeth* afford signs of dyspepsia; the same mucons membrane which covers the tongue, and lines the stomach, passing over the gums, dipping down the sides of the teeth, and sending a pulpy prolongation by the root of each tooth into its centre. This arrangement renders it sufficiently easy to explain the *redness, swelling, tenderness, sponginess, bleeding, and fetor of the gums*; symptoms which attend, in great or small array, most forms of indigestion, especially of the mucons character. In nervous dyspepsia, the gums often lose their nutrition, and shrink from the teeth, leaving their roots bare. Neither is it difficult to comprehend how, with such a prolongation of the mucons membrane, *aching, decay, and discoloration of the teeth* occur in dyspepsia. Besides this, the nerve which passes directly from the brain to the stomach, sends branches, as it goes down the throat, to the jaws, which branches give out a twig of nerve to each tooth. It is easy to see how a draught of water, diluting some acid liquid, or allaying some exasperated inflammatory action in the stomach, may almost immediately soothe "a raging tooth" in which no trace of decay could

be found to account for the pain. Many a noble grinder has been extracted, when the more pleasant operation of swallowing some iced water would have allowed it to remain in the jaw, and do good service for years to come.

"At the point where the inner mucous membrane ceases, and the outer mucous membrane, or skin, commences—at the lips—there is, frequently, accumulation of blood in the spongy tissue which constitutes them. This *fiery red, spongy lip*, occurs in recent mucous disease, or in nervous dyspepsia, at any stage; it goes with the red and spongy gums. Sometimes its covering membrane partakes of the nature of skin, and throws off mucus, which coagulates in the air, and forms dry flakes on the lips. But when dyspepsia has been of very long standing, and has invaded the structure of the duodenum, or liver, we have the lips at first marbled red and white, and, as the disease advances, the white predominates, the lips, the lower one especially, becoming blanched, waxy, and hard. This is the old drunkard's lip, and bespeaks irremediable mischief.

"Proceeding from the back of the throat to the nostrils, and thence, by the passage for the tears to the eyes, the mucous membrane lines the eyelids, and covers the eyeballs to the extent of the portion called "the white of the eye." Hence the *bleared, suffused eyes*, of many dyspeptics; the *gorged, thickened*, and internally *red*, and externally *dark eyelids*; the inflamed glands at the roots of the eyelashes, accompanied by deficient, or *thick gummy* secretion there. And as these two surfaces—the inner eyelid, and white of the eye—work upon each other, the result of their congested state is painful action, producing flow of tears, the whole going by the name of '*weak eyes*,' a symptom of very common occurrence in chronic indigestion.

"*Itching of the nostrils, dryness*, or, on the other hand, *excessive distillation* from them, *irregular sense of smell*, all which take place in dyspepsia, are accounted for by the extension of the gastric mucous membrane to the nostrils. When the membrane is gorged and thickened, the nerves of smell spread over it are oppressed in their function, and *deficient sense of smell* is a dyspeptic symptom. The same connexion of membrane renders dyspeptics very liable to take cold in the head—that is, to have the lining of the nostrils gorged with blood, as the secondary consequence of external cold.

"Running up from the back of the throat to the *Eustachian tube*, which is the avenue thence to the inner ear, the mucous membrane here, also, is liable to variations with that of the stomach. It may become *dry*, and then there is *burning* pain, and *acute sense of hearing*; or it may become gorged with blood, swelled, and, stopping up the passage, produce one species of *deafness*. Irregularity of hearing is a symptom very often complained of by dyspeptic patients.

"Finally, the gastric mucous membrane passes over the spongy bones at the back of the nostrils, and reaches and lines the hollow space which separates the two plates of the bones of the forehead—the *frontal sinus*. This is the seat of *sick headache*, and of *bilious headache*, as irritation of the membrane of the stomach itself, or of its extension to the liver prevails.

"So far, it will be perceived, the symptoms of dyspepsia are explicable by the continuation of the inner surface of the stomach. But, in thus tracing them by continuity of membrane, it should never, for an instant, be forgotten that the sympathies, healthy as well as morbid, between the different portions of that membrane, are due to the similar nutrition of them all under the direction of the ganglionic nervous system. It is the nerves of this system which should be ever present to the mental eye of the practitioner when he beholds, in the various signs I have detailed, evidences of chronic dyspeptic disorder. Failing in this, he falls into the worst errors of ontology, treating names instead of states of action, and putting aside as non-existent the organic sensitiveness of the most sensitive membrane of the body—the mucous membrane of the digestive organs. We know not of such membrane without myriads of nerves of organic life entering into its intimate texture, and regulating all its vital actions. Not a tear distils from the eye, nor a drop of the wonderful gastric juice from the lining of the stomach, save at the urgency of the ganglionic nerves which supply the membrane of either organ."

#### DR. GULLY ON THE PLEXUS OF GANGLIONIC OR NUTRITIVE NERVES AT THE PIT OF THE STOMACH.—

"Around, and especially underneath the stomach, there is a thickly-meshed network of nerves of organic life, from which, after infinite subdivisions, myriads of twigs proceed into the substance of the stomach, and endue its inner or mucous membrane with *organic* sensi-

bility and secretorial power. Intertwined with this network are nerves from the spinal cord and brain, whose office is supposed to be, the conveyance of sympathy and *animal* sensation to and from those organs and the stomach: the quantity of these nerves of communication varies in individuals. Now, by *nervous* indigestion I mean those symptoms which indicate irritation of the nervous network about the stomach; and by *mucous* indigestion, those which point at the lining membrane of the stomach as the seat of the mischief. Such a distinction unquestionably exists, and influences the treatment and the result; but, as may be readily conceived, where in one case the roots of the nerves, in the other the extremities, are points of disorder, one oftentimes runs into the other, and each at all times more or less affects the other, the nervous irritation occasionally disordering the mucous surface, and the latter, when exasperated, involving the whole plexus of nerves, and, by the junction, exciting a most formidable species of dyspepsia.

“Cases of nervous indigestion are very common in persons of business, and of active and anxious minds—a large class in English society. The usual mode of treatment is to add fuel to the fire at the stomach, in the shape of tonic and alterative medication and stimulating diet. Yet is it not the less true that the patient must be made *apparently weaker* in order to be made *absolutely stronger*. That irritation of the stomach nerves which disorders the brain, now causing violent impulsive and fictitious energy, and again tremblings, must be reduced; and this done, the brain loses its old irritant, and returns to what it really is—a very weak, disabled brain, sending a very small amount of *sustained* energy to the limbs. This *lowering* part of the process is effected by the fomentations, wet-sheet packing, and diet, which, while they seem to enfeeble the brain, relieve the viscera from oppression, and enable *them* to act more forcibly and healthily. Hence my saying that the patient is ‘absolutely stronger,’ though ‘apparently weaker:’ *real strength* is to be found in the healthy viscera alone.

“Six months is a sufficiently short period to conquer so slippery an antagonist as a morbidly nervous stomach, which has generally endured for more than as many years; and I would caution the reader against recorded cases of the disease cured in five or six weeks. Such cases never have occurred, and never will occur, save in the advertisements and pamphlets of charlatan writers.



“The same nerves of the great ganglionic net-work, situated at the pit of the stomach, which supply the latter, also by branches supply the liver; and the same mucous membrane which lines the stomach extends to line the duodenum, and thence, through the common gall duct, to line every one of the numberless ramifications of it in the liver, terminating, after infinite subdivisions, in the minutest points, where the great work of biliary secretion goes on. In the liver, therefore, as in the stomach, we have to view two kinds of derangements—one dependent on disordered *nervous* supply, the other on fixed *mucous* irritation. As regards the *duodenum*, we have no means of ascertaining its nervous disorder as distinguished from its mucous inflammation, which is one of the most formidable and intractable of digestive diseases. Still, as *duodenitis*—as chronic inflammation of the duodenum is called—never exists apart from disorder of the liver, I speak of both at once, only stating what additional signs mark its co-existence with diseased liver; which *may* exist without duodenitis.

“The sympathy between the brain and liver is one of the strongest in the body, and, as has been said, strong passion is a very common cause of a bilious attack. Hence, in chronic biliousness, the activity of the brain, as shown in great amount of exercise, and in the consideration of exciting subjects, should be avoided.

“**RHEUMATISM.**—Cold and damp are the ordinary exciting causes of rheumatism. The proximate cause is an inflammation of the sheaths and coverings of the muscles and large joints. But the predisposing cause is more deeply seated, and requires to be well kept in view when reference is to be made to treatment.

“Why the rheumatism seizes one joint or set of muscles more than another we know not positively; but we do know most positively that more or less digestive derangement is present at the time. I *never* saw a rheumatic attack in which such derangement was not present previously to its commencement. And how often does it not happen that a patient racked with pain, is *instantly* relieved, an iron band, as it were, taken from his limbs, by a copious vomiting of bile or a seizure of common cholera. Again, what are the drugs which usually relieve the *acute* attack? *calomel*, which forces the liver to pour out bile; *opium* in combination with calomel, which arouses an amount of irritation within, that sometimes, though very rarely, is thrown upon the surface in a

relieving sweat; *guaiacum* and other highly stimulating gums, which act in like manner: and *colchicum*, which, irritating the whole digestive canal, and causing vomiting upwards, and enormous secretions downwards, makes a diversion in favour of the particular phase of irritation that led to the attack, and the pain is relieved. All this points to the relief, to the alteration of action in the digestive organs, and notably in the biliary parts of them, as the great aim in the treatment of rheumatic disorder. Rheumatism is not a mere inflammatory pain of the sheaths of the muscles:\* it is a certain kind and amount of digestive irritation exhibited by a certain kind and amount of fibrous inflammation. Any other view of it leads to the most absurd and disastrous treatment.

"I have often observed that when the pain is confined to one or two joints, it is harder to get rid of; as if the concentration of visceral sympathy on the two joints rendered its removal to the entire skin more difficult. Age has also some influence on the length of treatment: after the fiftieth year, one is obliged to spread the treatment over more time, because the body is not so apt for strong reaction. I have noticed that women are longer in recovering than men: probably from the *neuralgic* element entering more into the essence of the disease in them; for that again influences the time of treatment, that form of rheumatism being more tedious than the purely fibrous kind. But in any case, it is better to look forward to a somewhat long treatment, which is both safer and more sure,—safer as regards the nervous system—surer as regards the eradication of the visceral irritation. Altogether the time may be said to range from three to twenty months.

"WHENEVER A PATIENT UNDERTAKES THE WATER CURE, WINE, AND ALL OTHER ALCOHOLIC STIMULANTS, ARE WITHDRAWN TOTALLY AND AT ONCE; yet I *never* saw the smallest inconvenience, still less danger, follow. He only exchanged a less for a more natural stimulus.

"It is upon the organic power enjoyed by every blood-vessel in the body, a power represented by the ganglionic nervous system, and having its centre in the viscera, that the water cure operates; and it is by it that the water cure produces its results. It is by the liberation of this power from

\* Bad digestion causes poor blood that cannot afford the serum to line the sheaths, and thence the pain and inflammation.—J. S.

oppression, and the restoration of its energy, that the water cure rouses in it those salutary efforts which constitute the *only* means of obtaining *permanent* cure."

DR. MILLER ON THE ORDINARY FUNCTIONS OF THE HUMAN BODY IN HEALTH.\*—"Every function of the living man—whether thinking by help of his brain, for example, or working by means of his muscles, or secreting through the agency of his glands, produces a corresponding disintegration of the appropriate structure; a certain amount of nervous, muscular, or secreting tissue crumbles down, and, for the time being, is rendered useless to the living economy; and, besides, its presence any longer—at least in that condition—would prove hurtful. A twofold action is required: first, to supply renewal for the waste; and second, to have the wasted material suitably removed. The latter object is accomplished by the blood, which, by the help of veins and absorbents, receives the used up stuff into its backward or venous current, for the purpose of consuming part by the action of oxygen in the lungs, and disposing of what remains by means of the organs of excretion—the liver, bowels, skin, and kidneys. The renewing supply of the waste, from tear and wear, on the other hand, is performed by the arterial blood, in its onward current throughout the frame. Filtering through very minute and numerous vessels, called capillaries, it allows that portion of it which is needful to compensate for the ever-recurring loss to escape, and come in contact with and be applied to the parts which need it. The waste is constant—greater according to the amount of exertion made, but always more or less; and the supply must not only be constant too, and proportional in amount, but also of a *certain quality*. Send venous (*exhausted*) blood to muscle, and you mar both its structure and its working. Do the like by the brain, and the result is similar: you disorder its function invariably, and may easily enough silence it for ever. To nourish, blood must be arterial, (*having received oxygen through the lungs*). Having nourished, it becomes venous (*exhausted*)—not only useless but noxious to the organs that need nourish-

\* "ALCOHOL: its Place and Power. By James Miller, F.R.S.E., F.R.C.S.E., Professor of Surgery in the University of Edinburgh, &c., &c. London: Houlston and Wright, and W. Twedie, and of all Booksellers. Cloth 1s.

ment, and fit only to be sent back through the liver and lungs, there to undergo such changes of giving and taking as shall once more qualify it for its work of supply. In this backward course, as already said, it receives and is mingled with the used-up material, whose loss its next wave has to compensate. And whatever tends to send on this doubly defiled current over the whole body, with an imperfect performance of the purifying process—technically called *depuration*—must inevitably cause most serious interference with health and longevity.

“But the blood is not a mere circling fluid, ‘self-contained.’ In every circuit it makes, it loses largely, both in quality and quantity; and its loss must be made up. This is done through the stomach. Food is taken in there, masticated, softened, and mixed up, so as to be in a state of suspension and solution. The gastric juice—or peculiar secretion of the stomach—mingles with it; and the *digestion* is carried on, as if in a stew-pan. Having become a pulpy fluid, called *chyme*, the food moves slowly into the alimentary canal; there it receives farther additions—bile from the liver, and juice from the pancreas or sweet-bread; the nutritious portion, called *chyle*, is taken up by the absorbents, whose various tubes concentrate into one common duct; and this empties its contents into the venous returning blood, just before it begins its purifying circuit through the lungs. So the feeder is fed.

“But some things—alcohol happens to be one, and the poison of asps another—are impatient of so round-about a journey; they must be to the blood at once. They will not wait to be digested; but, taken up as they are, by the veins of the stomach, are carried—little if at all changed—into the general venous circulation, and do their work there, whatever it may be, with almost instantaneous rapidity.

“What takes place ordinarily in the lungs requires a little special consideration. The blood having suffered exhaustion and loss in its work of nourishing all the various parts of the body, having received a supply it greatly needed from the stomach and bowels, in the form of chyle—as a help; and having got also, what in some respects it might have seemed to have been better without, the used-up material refuse of life and working—as a burthen,—it passes by the right side of the heart through the lungs; and in the cell-like ramifications of these, it is brought in all its motley mass into contact with the air, which for



that purpose has been taken in by the wind-pipe. This air parts with its oxygen; a large proportion of which unites with carbon and hydrogen in the blood, carbonic acid and watery vapour being extricated in consequence. This important change, chemically called *oxidation*, is really a *burning*. Though not accompanied by light or flame, it is, like ordinary combustion, productive of heat; and, in consequence, it will be readily understood that the process of respiration, when duly performed, fulfils two important objects—ærating the blood, and at the same time helping to maintain the due temperature of the body.

“BUT WHAT IS IT THAT IS THUS OXIDISED, OR BURNT, BY THE BREATHED AIR? TWO THINGS. The used-up material of the structures, returned in the venous circulation, is either burnt off, or so modified as to be converted into the most suitable forms for final expulsion from the blood. The greater part is thrown off in the form of carbonic acid and watery vapour, while the rest, imperfectly oxidated, moves on into the general circulation, to be dealt with exhaustively in the lungs on its next transit, or to be disposed of by the liver, bowels, skin, and kidneys. This treatment of the ‘waste’ is essential and must be done. But the doing of it is not enough, of itself, to maintain the general temperature. And so a portion of food, digested in the stomach, and received by the blood as chyle, is specially devoted to the process of burning too; that portion consisting of such articles of diet as contain no nitrogen—oil and sugar being special examples.

“In this wondrous living factory of ours, the waste material is not only burned off—as farmers do ‘wreck’ on the surface of their fields—there is besides a special heating apparatus constantly at work; and so, by the two-fold process, the blood is purified of its hurtful matter, while the whole frame is maintained in its due heat. Let either part of this process flag, and evil must ensue. Burn off all the blood’s impurity, yet have an insufficient supply of extra fuel from the stomach—the body must grow cold.\* Send an inordinate amount of peculiarly

\* It is not alleged that the whole of the heating process is done in the lungs. On the contrary, there is good reason to suppose (as will immediately be stated) that every act of nutrition and disintegration of tissue throughout the body—every change from fluid to solid and from solid to fluid—is accompanied with disengagement of caloric. But obviously while much of the ‘oxidation’ is done in the lungs, almost all the oxygen enters by the lungs, whereby the ‘oxidation,’ or burning, is performed.

combustible\* material from the stomach, so that it shall do almost all the burning—then the blood's impurity cannot be sufficiently consumed; venous blood will come to circulate more or less, instead of arterial; and the most serious consequences cannot fail to happen. The kidneys, and skin, and liver, will make great exertions, no doubt—as excretory organs—to throw out the evil thus forced through the system; but they will not wholly succeed; and they themselves will suffer injury in the strain. The blood will remain impure, important organs of the body will be thrown into a state of disorder, and disease of a serious kind may be established.

“ But the whole of the oxygen taken in by the lungs is not thus accounted for. About a fourth passes into the system, with the blood, without being spent at all on oxidation of the ‘waste.’ This portion of the oxygen cannot well be traced in its course; but there is good reason to believe that it acts an important part in the change of the nutritious part of the arterial blood into living tissue—supplying renewal for the ‘waste;’ and that it is again active in the crumbling down of that tissue—constituting the ‘waste;’ in both actions evolving caloric. And so here is a third way of maintaining the general temperature.

“ Under the term ‘alcohol,’ is included, let it be distinctly understood, every kind of intoxicating drink. All the varieties of spirits, wines, and malt liquors, are the same as to their intoxicating quality; that invariably depends upon the presence of alcohol. This may be more or less diluted, mixed, coloured, and flavoured; or, as in the case of malt liquors, combined with a small quantity of nutritive material;†

“ \* Whether it be because alcohol is ‘peculiarly combustible’ or not, may not be quite determined; but Prout and others have experimentally ascertained that less carbonic acid than usual is evolved during the presence of alcohol in the blood, and that that fluid is decidedly darker than in persons untainted by the ‘poison.’ It would almost seem as if alcohol, circulating in the blood, to a considerable extent suspended, for the time, the chemico-vital processes proper to the fluid in its normal state. Thus the oxidation of the phosphorus of waste tissue is sometimes so interrupted by alcohol, that the body of the drunkard smells of phosphorus, his breath presents a visible phosphorescence, and his urine is luminous in the dark. As will afterwards be seen, this is the only luminosity which alcohol imparts to the debauchee.

“ † Very small in the best of them, especially if you exclude the saccharine stuffs. For, according to Liebig, suppose a man to consume, daily, eight or ten quarts of ‘the best Bavarian beer,’ he will obtain from it, in the course of twelve months, no more than the same quantity of nutritive constituents contained in a five-pound loaf of bread.

but it is always present, and according to its amount is the intoxicating power of the beverage. A man is apt to draw a broad distinction—greatly in his own favour—between himself drinking beer and another drinking brandy, as a daily habit; but the truth is, that both are drinking the same thing, only in different guise and dilution; chemically and practically, there is much the same difference as between one who drinks spirits ‘neat’ and another who drinks his allowance of the same thing largely ‘watered.’ The one drinks alcohol slightly diluted; the other drinks alcohol much diluted, and somewhat modified by flavour; but both are drinking alcohol. Not a day passes but you may hear, ‘I am no drinker; for years I have never touched spirits; I take nothing but wine.’ The man who so expresses himself may be in the habit of taking his pint of sherry, or quart of claret, daily, or all but daily; and, while honestly convinced that he is touching no ‘spirits,’ is really swallowing the same amount of alcohol as if he had taken a glass or two of raw brandy or whisky instead. He believes that spirits are injurious; he would not take *them* for the world; yet all the while he is taking them; and surely it is of great importance that he should be undeceived. Let it be well understood then, at starting, that all intoxicating beverages contain alcohol, as their characteristic and essential ingredient; and however they may vary in taste or appearance, their chemical constitution as intoxicants is practically the same. Beer, no doubt, is less hurtful than brandy—wine less dangerous than whisky; but chiefly because they contain less alcohol.

“*Alcohol is a poison.* In chemistry and physiology, *this is its proper place.*

“Many readers may receive this dogmatic assertion with a ‘Pooh, pooh’—‘Fanaticism and folly’—‘We know better.’ Let me support the assertion, therefore, by authority. ‘The sedative action of alcohol on the brain,’ says Christison—and we know no higher authority, either as regards poisons or the articles of the materia medica—‘constitutes it a *powerful narcotic poison.* For its effects as such, if rapidly brought on by a large dose, *there is no antidote known*—the only efficacious treatment consisting of speedy evacuation of the stomach, and the employment of brisk external stimuli.’

“NOW LET US INQUIRE AS TO THE EFFECTS OF THIS FORMIDABLE AGENT.—Obviously, they will vary accord-

ing to the age and condition of the recipient, and especially according to the manner and amount of the administration.

"I. Alcohol absolutely pure is seldom if ever taken internally. To make it at all tolerable to the stomach, it must be diluted; and the strongest brandy, whisky, or other 'spirit' contains a large proportion of water—thirty, forty, or fifty per cent.

"But though thus modified, a large quantity in the adult, or a small quantity in the child, may prove rapidly fatal. It is almost at once absorbed by the veins of the stomach, and mixing with the blood is carried to all parts of the body, affecting certain of these very specially—namely, the nervous centres.\* These are paralysed; the heart stops, and life ceases. A man quaffs a quart of brandy almost at a draught, tumbles down, and dies on the spot. The shock of the large dose of alcohol on his nervous system, with which it is almost immediately brought into direct contact through absorption into the blood, acts like a blow on the head, or a kick on the stomach. Prussic acid is not more deadly.

"To obtain some idea of the rapidity with which alcohol dashes through every obstacle to reach the brain—the material organ of reason, and the special object of the poison when once it gains access to the body—consider the following experiment of Dr. Percy:—He injected about two ounces and a half of alcohol into the stomach of a dog, and the animal dropped dead almost instantaneously. As soon thereafter as he could remove the brain—an operation which occupied only a few minutes—and place it in an apparatus for distillation, he by that process extracted from it a notable quantity of the alcohol—more than from an equal weight of any other part of the body, or of the blood itself.

"II. But the dose may not be such as to kill at once by shock. The bottle, we shall suppose, is consumed more leisurely, and by and by the man is found in a state closely resembling apoplexy—with suffused face, labouring pulse, heavy, noisy breathing, and total insensibility. What has happened? The alcohol absorbed has reached the nervous centres as before, and has all but paralysed their functions; in

\* "I can't drink spirits, or even wine; *it goes to my head*. I find it instantly go to my head.' The words are right, literally, as well as metaphorically, though the speaker thinks, perhaps, only of the latter sense."



consequence, the heart and lungs are both acting most imperfectly; the blood is failing to receive its due proportion of oxygen in its oozy passage through the lungs, and is, besides, directly altered for the worse by the alcohol's actual presence in it. The man is choking gradually, as if with a rope round his neck, or a clot of blood in his brain. The hand of alcohol is on his throat; breathing becomes slower and slower, the heart beats more and more faintly, the body grows cold, and in no long time all is still in death.

" Peculiar circumstances may render such an event possible under even a comparatively small dose. Ordinary 'intoxication' may not have occurred, yet the alcohol may so injuriously determine to and act on the brain, as to cause congestive apoplexy, modified by symptoms of poisoning. And under this, life may give way, as in the following case:—A gentleman supped out, drank several tumblers of toddy, came home, went to bed. In the morning he was found insensible. A physician, hurriedly called, at once recognised the symptoms as those of narcotic poisoning, and treated the patient accordingly. Reaction began, but failed, and death occurred within a few hours. On dissection, no organic lesion or other cause of death was detected. The contents of the stomach were carefully secured, and made over to the care of a skilful chemist. Morphia was suspected, but nothing could be found—save alcohol.

" **III. INTOXICATION!** We need not describe what every one has seen, and not a few have felt. Let us, however, trace the action of the agent in this too common variety of alcohol's effects. Reaching the brain, more gradually and in smaller quantities than in the previous examples, the alcohol acts as a stimulant at first. The intellectual functions are excited, as shown by gaiety, talkativeness, animated expression, play of fancy, and increased rapidity as well as variety of thought. But the paramount function of *voluntary control*—the great distinguishing characteristic of the human mind—is already affected otherwise than by increase or exaltation. While perception, memory, and imagination are specially excited, the will, almost from the first, is sensibly impaired. The mind suffers in its best part, through even slight tampering thus with the material organ wherewith it is connected.

" The heart is roused, and beats quicker; the general circulation is hastened, and the whole frame feels warmer, stronger, and better.

"As the dose is continued, its effects are not only observed in the functions of the anterior and upper parts of the brain—its intellectual portion—but extend to the deeper and posterior parts, connected with special sense and muscular power. Sight and hearing are affected, the limbs grow weak and tottering, the head swims, the tongue refuses distinct articulation. At the same time, intellectual excitement becomes more and more decidedly intellectual perversion, partaking of the nature of delirium; reason is at a discount, and voluntary control placed more and more in abeyance. What is specially human is lessened, what is merely animal is intensified; the passions rise rebelliously, and defy all moral control; and the man becomes, under his own act, what the law has quaintly termed him, '*voluntarius demon*.' He is temporarily *insane*, and fitted for any act of violence to himself or others.

"But as the poisoning material filters on into the frame, its effects advance still farther. All semblance of stimulation, in any part or way, is over now. Intellect is all but departed; and muscular power, as well as the special senses, are gone or going too. Besides involvement of the whole brain, the upper part of the spinal cord is suffering; and, in consequence, the heart is weakened, the pulse is labouring, the respiration is oppressed; the face that awhile ago was pale and haggard, is growing swollen and livid; and unless a halt is called now, life will speedily be in peril by coin.

"The best that can happen is a heavy death-like sleep of long duration, with an awakening to fever of body and misery of mind.

"OR THE MENTAL AFFECTION MAY BE OF A DIFFERENT FORM STILL—WHAT IS TERMED '*DELIRIUM TREMENS*':—the body weak, the nerves unstrung, the mind a prey to all manner of rapidly shifting delusions, with suspicion and fear; violence to others improbable, but injury to self not unlikely. This may be the result of an occasional bout of hard drinking, or may form a part of the 'chronic poisoning.' Ordinarily, it is connected with some aggravated excess in the habitually intemperate.

"As a sample, take a case—in some respects curious. A gentleman of middle age, and active business habits, had for years been intemperate; and more than one attack of *delirium tremens* had imperilled his life. When first I saw him, he was in his shirt, hopping incessantly from chair to chair, in order to avoid myriads of snakes that were

erawling on the earpet. Then the vision changed upon him, and he rushed about more violently to escape from men following him with sharp knives. Suddenly he leaped upon the bed, arranged his limbs quietly, and scarcely breathed. He told us he was dead, and read out an announcement of his sudden and unexpected decease, from the page of an imaginary *Courant*, concluding with 'Friends will please to accept of this intimation.' So he lay for some minutes, affording breathing time to his attendants; but all of a sudden he rose, went into the sitting-room, and began to write with a trembling hand hastily at the table. He said that he had stupidly forgotten to add a codicil to his will, and was glad to find that it was not too late to supply the omission. Having written a tolerably coherent statement, to the effect that he had died on such a date, and that he begged his employers to support his son as his successor in business, he quietly returned to his bedroom; but no sooner did he cast his eye on the empty bed, than he broke forth in a most violent tirade against the attendants for having stolen his body. 'Where is it? where is it? I left it lying there when I went into the parlour to write the codicil, and when my back was turned some scoundrel has taken it away. Bring it back instantly.' And so he lapsed into excitement again. But by and by stupor came on, he lay quiet once more, and despite of all the help that we could give, the 'died at Edinburgh' became a sad reality.

"The man does not always die, however; he may recover many a time, drinking on and on; but death in the paroxysm is not unfrequent; and, besides, this trembling delirium may pass away, only to be followed by steady insanity.

"ALCOHOL AS FOOD.—Here is the fundamental and fatal error: men esteeming that to be food, and using it as such, which is really not food, but physic.

"Food, properly so called, is that which enters the stomach, and is thence absorbed into the general circulation, with the double object of nourishing the body and maintaining its due temperature. Such food meets with a solvent in the natural secretions of the stomach, and of other organs connected with the chyle-making apparatus—such as the salivary glands, the liver, the pancreas; and, besides, a solvent is needful also from without—holding the food in solution at the time of being taken, or swallowed along with it, or after it, in sips or draughts.

Now, can alcohol be duly entered here as food, or solvent for food? Not as the latter, certainly. It refuses to act along with the gastric juice. 'It is a remarkable fact,' says Dr. Dundas Thomson, 'that alcohol, when added to the digestive fluid, produces a white precipitate, so that the fluid is no longer capable of digesting animal or vegetable matter.' 'The use of alcoholic stimulants,' say Todd and Bowman, 'retards digestion by coagulating the *pepsin* (an essential element of the gastric juice), and thereby interfering with its action. Were it not that wine and spirits are rapidly absorbed, the introduction of these into the stomach in any quantity would be a complete bar to the digestion of the food, as the pepsin would be precipitated from solution as quickly as it was formed by the stomach.'

"In the laboratory of the pharmacist, alcohol is very valuable as a solvent; it holds many things in admirable solution, and many a good tincture it makes. But in the living stomach of man—which *ought* to be no drug-shop—alcohol tends to harden and coagulate rather than to soften and dissolve. 'It is through the medium of the *water* contained in the animal body,' says Carpenter, 'that all its vital functions are carried on. No other liquid than water can act as the solvent for the various articles of food which are taken into the stomach.' Water dissolves them there; water carries them into the blood, and through the frame; and water helps to work them off again when useless. Indeed, water seems to have a very remarkable power in depuration of the system from the noxious presence of effete material—more especially when taken beyond the limits of what mere slaking of thirst requires. And on this *water-power*, no doubt, much of the success of 'the water cure' depends.

"BUT IF ALCOHOL BE NO SOLVENT OF FOOD, IS IT FOOD ITSELF? Let us see. Can it nourish or repair the waste of tissue? Not at all. It contains no sufficient chemical constitution for that end; and, besides, as we have seen, it is conveyed *unchanged* into the blood, and so circulates there until either disposed of by combustion in the lungs, or removed (more or less modified then) by the organs of excretion.

"Does it help to maintain due temperature? It is only too ready to do so. It is very forward to be burnt in the lungs. But is its action there desirable? The mixed ordinary food of man (as beef, bread, and



vegetables) which nourishes his body—doing specially and well what alcohol cannot do at all—contains not only the peculiar materials for nutrition, but more or less of *fat* or *oil*, and *sugar*, or matter convertible into sugar. Now these—especially the oil—are very suitable for oxidation by the lungs,—hence often termed ‘respiratory food;’ and their peculiar function seems to be the undergoing of that process, with a view to maintain temperature—in so far as such maintenance may be necessary, in addition to what is done by oxidation of the waste material returning in the venous blood. In other words, the natural arrangement as to maintaining temperature seems to be as follows:—Probably every act of nutrition and every act of disintegration of tissue—the passing of fluids into a solid, and of solids into a fluid condition—is attended with more or less production of heat; a special supply of spare oxygen being provided for that purpose. Besides, the disintegrated and waste material\* in the venous blood is burned off, combining directly with oxygen taken into the lungs. And any further combustion which may be necessary for completing the efficiency of the warming apparatus is effected by means of the oil and sugar, more especially the former, which ordinary food supplies. Now, it is ascertained that in ordinary food, received in even moderate quantity, there is not only enough of these combustible materials to ensure sufficient temperature, but more than enough—the superfluity being stored up, as it were, in the ordinary fatty tissue throughout the body, to meet accidental scantiness of supply, through long fasts or famine.

“Suppose, now, that alcohol is taken in any considerable quantity, along with the ordinary supply of food. It gets speedily into the blood, and into the lungs. There it has a greater appetite for oxygen than any of the other combustible materials we have mentioned; and accordingly is burned off first. The temperature may be maintained in this way, no doubt. But what happens in consequence of the temperature being thus maintained? Two things; or one of two things at the least:—The oil and sugar are not burnt off sufficiently, and these materials accumulate unduly in the body; or the waste material of the blood is not burnt off sufficiently, and this accumulates unduly in the

\* It is supposed that the waste material is in its venous transit to the lungs converted into a fatty substance, probably by the action of the liver, for the purpose of readily undergoing this combustion.

body—poisoning the blood, and producing the serious consequences formerly spoken of; or both of these results may occur—as we believe most frequently is the case. And a third evil is also possible:—The ‘spare oxygen,’ as we have termed it—intended to circulate with the blood to the remotest parts of the system, and to act an important part during both the waste of tissue and its repair, so generating heat—may also be seriously enervated upon; so great and greedy is the appetite of alcohol for this substance.

“The obvious deduction is surely this: that when man receives a fair average supply of food, he obtains at least enough of combustible material thereby; and that when alcohol is taken in addition, it is unnecessary; the act is a work of pure supererogation—so far as warmth-giving intra-combustion is concerned. And further, the alcohol so taken is not only unnecessary, it is also hurtful, by preventing certain changes in the constituents of the blood, the occurrence of which is essential to health. Alcohol, in short, is in such circumstances not only unnecessary but injurious.

“THE POWER OF ALCOHOL TO SUSTAIN A MAN UNDER BODILY LABOUR.—Many believe that such power exists to a very great degree, and they ground their belief on personal observation. All is based, however, on a fallacy.

“Labour exhausts vital strength—wasting structure, lowering function. The natural remedy for such exhaustion is food and rest. Waste of tissue is repaired, and the living power of the renovated tissue re-accumulates, ready for a fresh bout of working.

“The exhaustion of bodily labour, remember, implies disintegration of substance, as well as diminution of power, especially in two tissues—the muscular and nervous: the muscular is the direct agent of work; the nervous is the inciter and inspector—the ‘oversman;’ and both are more or less exhausted by their respective duties.

“Now, how is such exhaustion to be either retarded or recovered from? We again say, by food and rest, properly arranged in regard to time and quantity. Let a man have sufficient food, and sufficient rest, at the proper times; and he needs no other corporeal help for the due discharge of his daily toil. He is thus enabled to overtake as much work as his frame is naturally fit to bear. And if, under such circum-

stances, he break down, or threaten to do so, it is a sign, not that he needs more working power, but that, being overtasked, a portion of the exacted work should be foregone. And, consequently, the man who stimulates himself, under such circumstances, is guilty of folly; while he who stimulates another, in similar circumstances, is guilty of cruelty and oppression.

"Now, can alcohol be brought under the category of 'food' here? As such only can it prove a true antidote to exhaustion by labour. No one asserts that it has any power to repair muscular tissue. Has it any power to nourish or repair nervous tissue? This question is open to debate; but our best authorities answer it in the negative.

"Well then, if you give alcohol to a man exhausted, or being exhausted, by labour, what effect does it produce? Does it not revive him, giving to his hand a stronger grasp, and to his limbs new vigour? do not the strokes of his hammer gain a fresh force, and does not the task which he had almost abandoned become rapidly consumed? How is this? Not that he has got any nourishment or repair—any real return of strength; but because he has been goaded on to expend the remainder of his then existing strength or working capital, more rapidly and determinedly than he otherwise would or could (or should) have done: the ultimate result, of course, being, that when the task is done, the man is done too. The exhaustion is infinitely greater than it otherwise would have been.

"The alcohol does not give substance and strength to either of the decaying tissues; it only *stimulates* one of them—the nervous; and so forces on this to force on the other. The nervous system is to the muscular as the rider to the horse, guiding and controlling its movements. Alcohol provides this rider with a spur and whip; whereby the poor horse, jaded though he be, may be urged on to do an amount of work, which otherwise he would have broken down under. With what benefit to the horse? Exhaustion, fatigue, founder. With what benefit to the rider? There is retribution here; the result is, fatigue and founder too: for the alcohol, acting as a stimulant to the nervous system, exhausts *its* force and disintegrates *its* tissue in compelling it to urge on the muscles to a more rapid exhaustion of their force and disintegration of their tissue. The spur and whip, in their effects, exhaust the horse, but the labour of whipping and spurring exhausts

the rider too; and after the effort is over, both the inciter and the incited are in much the same plight. Had it not been better to have ceased from work for a time, giving the beast of burden its food and rest, the dismounted rider likewise seeking his refreshment and repose; so that, after a while, both might have started with new mettle?

"If alcohol has any power whatever in giving strength, wind, endurance, *condition*, why do trainers make so little use of it in preparing their men for feats of great exertion? *All* trainers use it, we know, most sparingly; not only in small quantity, but much diluted. And the *best trainers* do not employ it at all; strictly forbidding its use, indeed, because experience has told them of its hurtful tendency, in opposing rather than favouring their object in view.

"Tea and coffee, then, may rank both as food and medicine. And the question naturally arises, in reference to their latter character, Whether the copious and constant use of them as food is quite proper and safe? This, as we have seen, is *not essential* even under the greatest exertion. And without presuming to dogmatise, we would venture to say that when used as ordinary diet, or as luxuries in connection with it, they ought to be taken weak as well as in moderate quantity—in other words, temperately;\* while large and strong doses ought to be reserved for the necessities of the nervous system arising from exhaustion by labour or thought, depression by accident, or disorder by disease.

"When judiciously used, they may contribute greatly to our comfort—as much as any form of alcohol can do, and with none of its sinister results on body, mind, or morals. Call them medicines, if you will. They are 'domestic medicines,' at once safe and suitable; and, as such, the canister may range on the frugal cupboard far more appropriately than the decanter or the black-bottle, the tankard, the greybeard, or the glass.

"The great advantage of the water-drinker, as compared with the alcoholicist, under work, is this. He has the same strength, with greater self-control. He is ready to stop, when necessity requires that he should, and runs less risk, consequently, of injury by excessive strain. He does not expend a temporary energy, at the expense of future exhaustion. He does not avail himself of a doubtful and deceitful help,

\* Some have alleged that the success of homœopathic practitioners is not unconnected with the sparing use, or absolute interdiction, of coffee and tea, as well as of all alcoholics, in ordinary diet.



at the cost of deterioration of the blood, and consequent danger to health and life. He does his work at least as copiously and as well as the other, even for a time; and in long continuance of labour, he will do it both more copiously and better. He obtains his desired end in all respects satisfactorily. There is no lassitude, headache, feverishness, foul tongue, or aching limbs the next day—even after the hardest labour. All is fresh, and supple, and free. *There is no reaction.*”\*

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“KILLING NO MURDER.”—The case which I give below was published by Dr. Bright in a Paper on Jaundice, in the first volume of Guy’s Hospital Reports, and it is a counterpart of the cases quoted by Dr. Alison. It strikingly shows the barbarity of the present authorised mode of treatment by surgeons and physicians. There is no principle of scientific knowledge shown in the treatment of such cases, but, on the contrary, the patients are seen by them sinking under their hands day by day, as the vital powers of the body are gradually sapped by the Bleeding, Blisters, and Purgatives, which gradually destroy the nervous vitality, until nature kindly takes the poor tortured sufferer out of their hands. The physic in this case first brings on jaundice, by constantly causing nausea, which ipecacuanha is intended to produce. Then when it is found that the liver does not act, to make it do so, the strange plan of further weakening it by drawing fourteen ounces of blood from that region is adopted; this, and the doses of physic effectually take away all chance of restoration. And it is striking, how, day by day, as such outrages were perpetrated on nature’s laws and common sense, first one organ and then another ceased to act, until a cruel and agonising death released the poor sufferer.

“CASE 4.—Sarah —, aged 28, was admitted into Guy’s Hospital, as a surgeon’s patient, on the 6th of August. She was a married woman, and had borne two or three children; but had latterly been separated from her husband, and was said to be much addicted to drinking. As she had sores of a very suspicious character, she was ordered to take sarsaparilla three times a day,

\* ‘I have backed as many as 60 tons in a day, with perfect ease,’ says a London coal-whipper, ‘since I took the pledge. But, before, I should scarcely have been able to crawl home; certain to have lost the next day’s work.’ [By “backing,” the man meant carrying sacks of coal on his back from the barge they were unlading to the cart.]

with five grains of the compound ipecacuanha powder, and of the Plummer's pill, every night, which she continued for a considerable time. On the 13th of November, I was requested to take charge of her, as she was apparently very ill; had been complaining of abdominal pain for the last week; and during the last two days had become jaundiced. I found the bowels rather confined; urine tinged with bile; pulse moderate, but quick; slight tenderness at the pit of the stomach.

(Fourteen ounces of blood were ordered to be drawn by cupping from the region of the liver; the belly to be fomented: five grains of mercury with chalk to be taken immediately, and half an ounce of castor oil four hours after, and to be repeated until the bowels should be relaxed.)

14th.—There is still some tenderness on pressure at the pit of the stomach, and accelerated pulse.

(Fifteen leeches to the pit of the stomach; the mercury with chalk, and the castor oil, to be repeated.)

The yellowness increased; the stools continued of a pale clay colour; the tenderness of the upper part of the abdomen continued.

It is unnecessary to give a detail of all the daily symptoms. Cupping, mercurial purges, and blue pill, with fomentations, were continued; and during ten days no very remarkable change occurred.—(*The woman must have had a strong constitution, and a considerable degree of vital force, to stand all this as well as she did.*)

24th.—Slight tenderness over the whole abdomen; colour very intense; pulse, 96, small, and rather sharp; respiration, 27; bowels confined; thirst; occasional sickness; and occasional pains in the abdomen, much relieved by the fomentation.—(*Mark the relieving effort of our plans in such cases, why was it not continued when it gave relief?*)

28th.—She generally prefers the sitting posture in bed. Lips dry; tongue moist and red; some sluggishness in her mode of speech, and a plaintive tone; (*no wonder,*) pulse, 88; no sickness; six or seven loose dejections.

(Twelve leeches to the pit of the stomach; a linseed poultice to the belly.)

29th.—One copious lumpy white stool. Pulse, 96; slight tenderness of pit of stomach; respiration tranquil; tongue moist, but more red at the edges.

December 1st.—Her pupils are rather dilated; her mode of utterance is dull and indistinct; complains of loss of power in the left hand; the right is already disabled by disease.

2nd.—Is lying on her right side, drowsy, with her legs drawn up, moving her left hand with a kind of jactitation, often raising it to her head; she is capable of being so far roused as to put out her tongue when pressed to do so. Tongue moist, and red at the edges; the pupils are dilated.

(A blister to the crown of the head ; a earthartie enema.)

3rd.—Yesterday ovening she was screaming loudly, with her tongue protruded between her teeth. To-day she is in a stato of perfect coma, with the eyes turned up. Sho is ineapable of being roused, and has taken no nourishment or medicine sinco yesterday.

She died the following day."

Mark, not one single application was given with a view to nutrition,—it was all fire and sword against the frame, until it succumbed to the superior force, skill, and science brought to bear against it, and all this done in clear contradiction to the Faculty's own discoveries,—that the life of the body exists in the nervous vitality, the vis vitæ of the ganglionic system, or nerves of nutrition. They say, whatever lowers this brings on disease and death, and yet they lower this power with a promptitude, and with as steady an aim as a rifleman does his gun, and with as fatal an effect. I give the following case in Queen Elizabeth's time, of the Earl of Derby, which shows that the identical mode of action was then in use as now ;—the same war to the knife against the delicate wouderful structure of the human frame. The doctors however had not then made the discoveries of the functions and nature of the nervous system which are now so clear, and consequently they are entirely unjustified at the present time in using the Barber Surgeons' mode of practice.

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THE FOLLOWING IS QUOTED FROM ILLUSTRATIONS OF BRITISH HISTORY, by Edmund Lodge, and shows that the practice of killing by bleeding, blistering, and physic, was exactly the same in A.D. 1594, as the previous quotation shows it is now in A.D. 1858, as practised by the "Qualified" in our own days. It does not appear that there has been any variation in the 264 years, except that medical professors in our day do not attribute the failures to witches, but to the want of the power of life, which their treatment so effectually destroys.

"*Indorsed*, 'TOUCHING THE DEATH OF THE EARL OF DERBY, APRIL, 1594.'

"The 5th of April, 1594, his Honor fell sick at Knowsley ; on Saturday he returned to Lathome, and feeling himself worse, he sent to Chester for one Doctor Case, who the week before had given physic to his Lady. On

the Sunday his Honor had cast seven times before the Doctor's coming ; the colour of his vomits was like soot or rusty iron, the substance gross and fatty, the quantity about seven pints, the smell not without some offence , his Honour's water, in colour, substance, and smell, not unlike his vomits. The same night he took a glister, which wrought five times. On Monday morning he took one dram of rhubarb, and half an ounce of manna, in a draught of chicken broth, which wrought nine times. On Tuesday, because of his continual bleeding by vomits, he was most instantly intreated to be let blood, yet by no means he could be persuaded thereunto, therefore that day only fomentations, oils, and comfortable plaisters were applied. On Wednesday, by the appointment of all his doctors, he took another glister, which wrought six times ; and on Thursday he took another purge, which wrought with great ease nine times. The same night he took some diascordium, which somewhat stayed his stomach from vomiting, the which never ceased, more or less, in all the time of his Honor's sickness. On Friday he took a Diaphorcion, or a medicine to make him sweat, but he could not sweat, although internally and externally all helps of art were used. That night his water stayed on a sudden. On Saturday all means were used to provoke water, as a glister, drinks, fomentations, oils, poultices, plaisters and syringes, but nothing prevailed ; on Sunday and Monday a catheter was used, which the surgeon often sucked, but no water appeared. On Tuesday nature declined, and his Honor most devoutly yielded his soul to God.—(*And so he got out of the hands of the doctors.*)

"In all the time of his sickness he had fifty-two vomits and twenty-three stools. The original cause of all his diseases was thought by the physicians to be his long and over violent exercise, which his Honor took four days in the Easter week, wherein he vehemently distempered the whole state of his body. His Honor's diseases were apparently vomiting of rusty matter and blood, yellow jaundice, swelling of the spleen, melting of his fat, staying of his water, the hiccough. His Honor took Beza\* stone and unicorn's horn.

[It appears the doctors were so confident in their mode of practice that they could only account for its not succeeding by attributing death to witchcraft ; a council was called in, and the following report drawn up.]

\* Bezoar.



*"A brief of such Reasons and Conjectures which caused many to suppose his Honor to have been bewitched.*

"1. On Thursday night, being the 4th of April, 1594, his Honor cried suddenly in his sleep, started out of his bed, sought his Lady, whom he thought in a dream to be dead.

"2. On Friday, in his chamber at Knowsley, about six o'clock at night, there appeared a man, tall, as he thought, who twice crossed him swiftly, and when he came to the place where he saw him he fell sick.

"3. The same night he dreamed that he was stabbed to the heart, and wounded in many other places of his body.

"4. There was found in my Lord's chamber, by one Mr. Hallsall, an image of wax, with a hair drawn through the belly thereof, as he reported upon his oath.

"5. One Jane a witch, demanded of one Mr. Cowleborne, his Honor's Secretary, whether my Lord felt no pain in his lower parts, and whether as yet he made any water; and at that very time, as it is thought, his Honor's water stayed.

"6. All physie wrought well, and yet he had no ease; his diseases were many, and his vomits violent, and yet his pulse ever remained good and perfect.

"7. He himself in all the time of sickness cried he was bewitched.

"8. He fell into a trance twice, not able to stir head, hand, or foot, when he should have taken physie.

"9. In the end he cried out against witches and witchcraft, reposing his only hope of salvation upon the merits of his blessed Saviour.

"10. One of the witches having said well the Lord's prayer, and being forced to call upon the name of Jesus, that if she had bewitched his Honor, she might not be able to say it, again before the examiners she said all well, till she came to *Dimitte nobis debita nostra*, which by no means she could say or repeat, although it was often rehearsed to her."  
(Whether or not they burnt the witch is omitted.)

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CASE OF SCIATICA.—A gentleman engaged in farming, and sometimes in field sports, had, from indigestion, and often keeping his wet clothes on, an attack of sciatica, or inflammation of the sciatic nerve, which, as seen in the engraving, takes its rise in the hip and

runs down the back of the leg to the heel. The attack was sudden and severe, causing intense pain and almost incapacitating him from walking. The doctor was sent for; he applied the routine practice which, as I have shown, is not a jot improved upon in principle since the case I name of the Earl of Derby, in A.D. 1594, and notwithstanding the wonderful discoveries of the nature and action of the human frame, it is still war to the knife with the poor body, and a war in which many times more than were destroyed in the Crimean war are killed, wounded, and missing every year. After calomel and heating lotions for a few weeks, the patient not getting better, (as there was not the least probability would be the case with such barbarous, ignorant plans) both patient and doctor were brought to a stand to know what course to take next. The gentleman was only twenty-six years of age, and it was sad to see the prospect of being crippled for life, as the doctor well knew would be the case unless more life could be got into the limb, and so he said to the patient, "We must take some stronger measures, and try blistering," which the patient was very unwilling to submit to: however, his surgeon told him that it was his only resource. Now mark, the faculty proclaim that the life of the body consists in this *vis vitæ*, or power of life in the nervous system, or the nerves of nutrition, and, as Dr. Hooper says, whatever lowers this, lowers the vitality of every organ. But in this case, as in all their practice, they make no scruple in setting this doctrine at defiance. The surgeon laid a powerful blister on the leg, and soon as it rose all use was gone out of the limb, and the patient could not move it an inch! The first blister not "succeeding," the surgeon wished to try another, but the patient refused to submit, and well for him that he did, for in all probability had he tried another, the life would have been effectually expelled from the part. A few weeks after this he heard of my Establishment, wrote to me, and I advised him to come immediately. I told him he would have to wait while we got nutrition into the limb before he could use it. For six weeks we were attending to his general health by our comforting baths, by abstinence from all stimulants, and little or no flesh meat. He had been prescribed "good living" and bitter ale; we thought he had too much, or quite enough inflammatory action in his blood, and accordingly prescribed "good living" in the form of our nourishing food, and water to drink, which gives real nutrition.

At the end of six weeks his bodily health had greatly improved and he had gained weight, but the pain in his leg was almost as severe as before, and he was unable at all times to leave the sofa. He said, "you have done your best, you have been very kind, but I must give it up as a hopeless case." I told him I yet had not the least doubt of his perfect recovery, and begged of him to have as much patience with our system as he had with the doctors, and especially when we had proved to him that his frame was recovering. I said, if you leave now and give up the treatment you will be a cripple for life. He stayed a fortnight longer, when symptoms of crisis began in the limb, and then I knew relief was speedily at hand. He returned home, as his business required him, but he promised me he would employ one of his servants to give him the treatment I prescribed, and persevere in the same course as far as he could. He did so, and very shortly was entirely cured, and has ever since (now two years ago) been quite sound, and his general health established. He has escaped being a cripple, and, moreover, has got important knowledge for life. I am ready to give reference to this case, or to any case I name.

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The following is a case in which the use of one leg had been lost a long time from chronic rheumatism. It was doubted by the surgeon if his hip was not out of joint, as one foot could not be brought to the ground by six inches when he was standing.

"Huddersfield *Examiner* Office, Feb. 1858.

"Dear Sir,—I still continue in a favourable state, and hope ere long to walk perfectly. I shall ever entertain a grateful feeling towards you for your disinterested benevolence in allowing me to use your baths for such a time, to the great benefit of my all but completely prostrated constitution.

Yours respectfully,

J. W. PICKERSGILL."

CASE OF MODERN ALLOPATHIC TREATMENT.—Mr. W. was taken about six years ago, when in the West Indies, with a kind of fit, coming on with a violent palpitation of the heart, and twitching of the nerves of the left side and face, with excessive flow of blood to the head, producing in the first attack insensibility. This Mr. W. con-

siders was brought on by fatigue, excitement, and debility, for which, however, he was bled freely: the attacks continuing, was bled again next day, after that twice more, leeches and blistered, and kept on extremely low diet, so that in a month's time was so weak he could scarcely stand. Returned to England, and after some months was sufficiently restored to health to take a situation as secretary to a public society, but has since, when subjected to continued fatigue and excitement, or much mental exertion, felt the same symptoms return.

This gentleman is now just come under our comforting natural treatment, and I can assure him he will regain the lost power of the nerves.



The Verandah of Matlock Bank Establishment before the Saloons were erected.

"THE CASE OF MR. STAFFORD, M.P.—(Communicated to *The Morning Star*, Nov. 28, 1857.)—The premature and sudden death of Mr. A. Stafford is suggestive of so many painful reflections, that I am prompted to analyse in detail the medical evidence adduced at the inquest, and to inquire whether it is not possible, by the adoption of a more rational system of medical treatment, to ensure more happy results, and to avert the recurrence of similar exhibitions to that which preceded the death of the lamented member for Northamptonshire. It is indeed sad to think that there should exist such glaring differences of opinion between medical men, and sadder still to know how many valuable lives are lost through the ignorance which prevails on the subject of the healing art. I must, *in limine*, disclaim any intention of uttering a single word that could



reflect in the least upon the skill of Dr. Griffin, whose attention to, and anxiety for, his patient, seems to have been unremitting. In fact, the verdict of the coroner's jury exonerates him, individually, from all blame. It is the system of medical treatment that I would take the liberty of examining.

With this object in view it is necessary to recapitulate portions of the evidence elicited at the inquest. Respecting the previous state of Mr. Stafford's health, we are told by his servant, Michael Naughten, that, with the exception of two attacks of illness which together lasted not more than two hours and a half, it had been "very good" during twenty-three years which he had lived with him. On Wednesday afternoon, the 4th of November, about three o'clock, Mr. Stafford complained of a pain in the lower part of the stomach, and said he feared that "nasty old pain" was returning again. It became worse up to five o'clock, when Dr. Griffin, of Limerick, was sent for, and he arrived at Cratloe, at half-past six o'clock. He bled Mr. Stafford and prescribed for him, leaving Cratloe between eight and nine o'clock. Michael Naughten looked into his master's bedroom about eleven o'clock and saw that he was "breathing very hard, much more so than usual. He was snoring at the time." This was unusual, and he adds:—"On different occasions for the last sixteen years I was in the habit of going into his room, but I never could open the door without awaking him." Michael Naughten again visited his master at two o'clock a.m., when he found him asleep "lying on his back and breathing harder than before." He did not awake him, as he thought it was all right, and was delighted to see him asleep. At five o'clock in the morning Mr. Stafford walked to Naughten's bedroom door, which was within a yard of his own, and called out "Get up, my arm is bleeding." Naughten tied up the bleeding arm of his master, who, after a few minutes, relapsed into the sleep of narcotism. Michael Naughten roused the other servants, and sent immediately for Dr. Griffin who arrived at Cratloe between seven and eight o'clock in the morning (November 5). He endeavoured to arouse his narcotised patient by forced walking, for "about a quarter of an hour." Naughten says, "We could not keep him awake by walking any longer. Dr. Griffin then ordered him to be put sitting in a chair, and told us to slap the soles of his feet. We put him on the bed for the same purpose. The thing next to hand was a razor-strop, which Dr. Griffin got himself,

and slapped the soles of his feet for about twenty minutes. By hitting him two or three strokes on the sole, he would open his eyes, look around, and then fall asleep again. I think the doctor took the slapping to himself for the first twenty minutes, but then his hands got blistered, and he could not continue to hit him hard enough, for he was getting heavier asleep. I then strapped him with the razor-strop until the handle broke, when we got the carpenter to make battledores about eighteen inches long, four inches wide, and half an inch thick. These were made of deal. We broke about a dozen of them. We were slapping him with these almost all the time on the soles of his feet. We tried the palms of his hands and the calves of his legs, but that had not the effect of keeping him awake, and we had to go to the soles of his feet again. These got quite sore, and the skin came off. He would shake his leg sometimes, and draw it back from the person that would be hitting him, and then fall asleep once more. We were obliged to hit him hard enough to make him feel it all over. He would sit up in the chair in spite of two men that would be holding him, and he would be scarcely up until he would fall asleep again. We continued beating him from about eight o'clock in the morning until between eight and nine o'clock at night. Five men took part in the beating, relieving each other. The doctor was present during the whole time. It was by Dr. Griffin's directions the beating process went on. When we gave up the beating, he seemed more lively. He used to stand up sometimes, and walked about once, and then fell into bed again. The dozen boards that were broken were fractured by the force of the blows that we gave him. When we ceased beating, he was put into bed by Dr. Griffin's directions, and in his presence. The doctor asked me, when he came in the morning, whether I had given my master the powder and the bottle he directed? I told him that I had not, and he said, "I am very glad that you did not."

Dr. Griffin sent for Dr. Wilkinson, of Limerick, who arrived at Cratloe about one o'clock, and left about three or four o'clock. Dr. Wilkinson, after consulting with Dr. Griffin in the next room, sat down and looked at Mr. Stafford, and said, "Beat him hard," Dr. Wilkinson told Naughten that his master had got "an over dose of laudanum." Dr. Griffin remained at Cratloe all Thursday, and left next morning, November 6th, about nine o'clock. Michael Naughten sat up with his

master all Thursday night, and visited him about twenty times. Mr. Stafford slept and started alternately during the night, breathed very hard and snored; "he was always nodding asleep and snoring up to the time of his death." Mr. Stafford left Cratloe on Tuesday, the 10th of November, and slept that night at Limerick, and arrived in Dublin on the following day, Wednesday, at four p.m., his journey by rail having occupied four hours and a half. After "night fall" of this day, he was visited by Sir Henry Marsh, whose evidence we will defer until we have heard that of Colonel Herbert, M.P., the Chief Secretary for Ireland, who says:—"I was a very intimate friend for many years of the late Mr. Stafford, and visited him during his recent illness in Dublin. . . . On last Thursday, Nov. 12th, about twelve o'clock, I received a letter from him, in which he stated that he had been dangerously ill, and that it was doubtful whether he would ever recover. . . . When I arrived he was lying on a chair in his room, with his feet on another chair. His servant was dressing the soles of his feet. The first sound that I heard was a groan of pain, from his servant apparently touching his foot. I was much shocked with his appearance. He described the agonies he had suffered during the treatment, and was certainly convinced that the cause of his death was the treatment to which he had been subjected. I attended him to the last, and was present on Sunday evening (November 15th), when he died. He gave me to understand that he had suffered very acutely from the pain of the disease, but he alluded more particularly to the pain of the beating."

Let us now examine the evidence of Sir Henry Marsh, who says:—"Upon this day week, Wednesday last, November 11th, I first attended him. I saw him about seven o'clock on that evening. He was up, but in a state of extreme debility. At the moment I saw him, I felt certain that he had travelled too soon. He was not fit for such a journey as from Limerick. He had great difficulty in getting up stairs." May this not be accounted for, in a great measure, by the state of Mr. Stafford's feet, which Colonel Herbert describes, and which he saw on the day following Sir Henry Marsh's visit? "I have a strong impression," continues Sir Henry, "that the violent and agonising pain complained of in the original attack arose from gall-stones. I suspected it during the life time of Mr. Stafford, but had no proof of it until the post-mortem examination, during the whole of which I was not present, but at quite sufficient to form that

opinion. The gall stones were in the gall bladder, and I am led to think that one had commenced to get into the duct, and caused the great pain."



Mr. Smedley's Hydropathic Establishment, Matlock Bank.

THE SUITABILITY OF HYDROPATHIC TREATMENT TO DELICATE PATIENTS IN WINTER IS PROVED AT MY ESTABLISHMENT, where we have saloons and bath houses, so warmed and ventilated, that the patients can have exercise, air, and scenery, without being exposed to the uncertainty of our winter climate. I have been endeavouring to draw the attention of the principal Hydropathic practitioners in this country to the necessity of having saloons fronted with glass and warmed, and bath houses well warmed and lighted, under one roof as mine are, with bath room staff and apparatus all under the practitioner's eye, instead of the cold bed rooms, or still colder miserable bath houses now in use, which are totally unfit for invalids in winter, causing Hydropathic Establishments to be all but deserted in cold weather, to the great injury of the cause, and delaying the relief or cure of patients who cannot wait till summer comes to have their maladies relieved.

When Hydropathic Practitioners denounce physic and allopathic



remedies, it is highly absurd to tell the country that hydropathic treatment only offers cure or relief in mild weather. The very defective and even hazardous manner, whether in summer or winter, in which some of the hydropathic treatment is given, is well calculated to confirm the prejudices of the public against hydropathic practice. I wrote to one of the principal Hydropathists in this country on this subject, and I give the following extract from his reply, without naming the writer or giving a clue to his name. He says, "I think too, you will find as I have found, that winter is suited for treatment only to strong persons, and is a course of hardships and privations—good training no doubt—that few will willingly undertake, except from the pressure of necessity." Reading these remarks to my patients in one of the saloons, the sun at the time making the temperature equal to summer, from the large extent of glass with which it is fronted, they prepared and presented me with the following testimonial:—

"Hydropathic Establishment, Matlock Bank,  
Derbyshire. Feb. 5th, 1858.

"To J. SMEDLEY, Esq.

"Dear Sir,—Having heard the following extract read from Dr. . . . . letter to you, viz., 'I have found that winter is suited for treatment ONLY to strong persons and is a course of hardship and privation,' We the undersigned feel certain that Dr. . . . . must not possess a proper knowledge of the treatment as practised by you in this Establishment, or he would not have made such an observation. We all came here, broken down in health, and in a very feeble state of body. Some of us had been medically pronounced consumptive, others to be suffering from bronchitis, liver complaints, heart affections, &c., and some were exceedingly nervous.

"We have been in this Establishment during the severest part of the present winter, but none of us has felt your mode of treatment to be either 'a course of hardship or privation,'—QUITE THE REVERSE. Care has been taken to treat us with water heated to a degree most suited to our various ailments. Our over-wrought, irritated, and prostrated nature has been accommodated, relieved, soothed and gently helped up without sudden shocks of cold, and in *our* cases she has gratefully co-operated with your treatment to help herself into an agreeable

and healthy condition. Your bath and sitting rooms, and saloons, have been kept at a proper temperature by steam, and your beautiful crystal palace conservatory, of nearly 100 feet long, has been very delightful for our exercise when we could not walk abroad. In fact our treatment has proved a *real luxury*, at the same time very beneficial.

"We also believe winter to be the best season for hydropathic treatment for many cases on your mild principles.

"You are at perfect liberty to make what use you may think proper of this testimony, for rectifying false and injurious notions, and making known to many the truth on this important subject.

"Two of us are leaving to-day cured and grateful.

"We subscribe ourselves

"Yours respectfully,

JOHN WICKS, Minister of the Gospel.

JOEL HODSON, Minister of the Gospel.

JOHN PARROTT, Minister of the Gospel.

WM. PARKER, Capt "N"

THOS. MITCHELL.

GEO. WOODFALL, "A"

JOHN WHITTLE.

India Staff.

W. LOCKWOOD, (recently from  
a "cold water" Establishment.)

MARY STUTTARD.

JOHN ELSE.

SARAH JONES.

EDWIN ROBERTS.

E. W. BROOKS.

J. THOMAS.

JOHN A. KENDRICK.

MARY ANN LOCKETT.

CATHERINE HESKETH.

ELIZA BRADFORD.

ELIZABETH HASSE.

HENDERSON WATSON."

A number more would have signed if thought necessary.

TREATMENT FOR CHILDBIRTH.—The treatment previous to delivery is stated at page 140, but the treatment after, was omitted. Immediately after delivery put a broad calico body bandage on, wrung out of hot water, and put a dry flannel bandage over that. The calico bandage should be double thickness, two yards long, and about fourteen inches broad; wring out as much as will go round the body, and not more. This relieves the pains and will cause the bowels to act; re-wet twice per day for a few days, and in changing it be careful to keep the

air from the bowels. This body bandage will do wonders in soothing the nervous system, and prevent milk fever.—*See page 141 for previous treatment.*

CASTOR OIL is not the simple harmless medicine it is generally supposed to be. (See Dr. Quain's opinion, page 133 of this work.) It is an oil pressed from the Castor nut, of an acrid nature, and often causes severe pain, and in cases of piles is highly irritating to the rectum, and will often cause the piles to protrude.

CASES OF THE LIMBS BEING SET FAST BY CHRONIC RHEUMATISM.—This frequently occurs. I have a man now in my free hospital, age 25, who was taken with rheumatism in his hips and legs two years ago. He was attended by a doctor, but gradually got worse, and in six weeks could not stand. His doctor advised him to go to the Infirmary, where he stayed five months, was severely blistered, twice salivated and setoned, and was discharged as incurable. The treatment he has been subject to has drained his constitution of vitality. His hip joints, which were quite fast, are beginning to be more pliable; he has a severe crisis out all over the parts, and I believe will recover.

ANOTHER, A SEVERE CASE OF SCIATICA, producing pain and lameness from the hips to the heels. One leading important principle it is indispensable to observe in all such cases, and that is, to have a constant application of moist warmth to the parts, and the greater this warmth the sooner will nature begin its work of restoring vitality. We find this effected in the safest and most natural way by using the bandages, as before described, at page 45. And in addition to this, we find that leg baths to the calves in hot mustard and water, 95 degrees, for thirty minutes at a time, very beneficial, but as this cannot be done very frequently on account of tendering the skin, we use wet packs for a long period to the hips and legs when the complaint is there, and when in the shoulders and arms pack them also, but not the whole trunk. In cases where the shoulders are fast from rheumatism, constant moist warmth is indispensable, and even after recovery, for some time there should be an extra quantity of flannel or lambs' wool hosiery on the parts. Fomenting for half-an-hour or so, and then leaving the part without plenty of packing to keep up the vitality is of no use; the stagnation in the circulation of the minute blood vessels

soon takes place again. The warmth must be kept up until crisis comes on, or recovery; but few such cases will escape crisis, which throws off the old tissue, deteriorated by the inflammation. Wet pack to the legs and hips is done in the following manner:—Spread macintosh sheet, over which a blanket, and then a wet thick cotton sheet, from the hips downwards. Put the sheet over one leg, and round it, and then the other side of the sheet over and around the other leg, then the blanket and the macintosh sheet, wrap all up close and tight, and let the patient lie in this for two or three hours if the parts do not feel cold. They may not feel hot, but if they do not feel cold is sufficient; after this sponge the parts with 70 deg. water, and repack with the strips. This packing does not weaken, however often it is practised, and the oftener it is done the better until crisis comes out, and then it should be done whenever the parts are hot or irritable, until quite recovered.

TREATMENT OF A CASE.—A Solicitor, age thirty-five, fully developed frame, energetic, and of rather excitable but very cheerful temperament, strictly temperate in his habits, married—(constitution not injured by any excesses) has lately come to enquire about Hydrophathy. His brothers have died of consumption; he has some tenderness of the chest, very subject to flushing in the face and head, and rather an hectic complexion. He had been advised to expose his chest, by way of hardening it; took freely of flesh meat to strengthen him, with a fair allowance of bitter ale and wine, but what would be considered only an ordinary quantity. Driving out at night, unaccustomed to wearing a wrapper round his throat, and to breathe the night air freely, under the idea that all the air he got the better, summer or winter. His naturally cheerful temperament kept him up; but both he and his friends began to be somewhat uneasy at the tendency to affection of the chest, and the uncomfortable flushings of the face, restlessness and inability to sleep well, which the use of animal food and his allowance of stimulants were so well calculated to increase. Now this is a case that would inevitably have progressed to pulmonary consumption, and the advice he had had was more likely to accelerate such a consummation than prevent it. I feel quite assured that this patient will owe his life, under God, to coming to my Establishment. I heard the history of his state, past and present, and I then made a survey of his clothing,



a point seldom noticed as it ought to be by doctors, but which is quite as essential to health as any treatment of any kind, and absolutely indispensable to be attended to. It was February, and he wore, as most men in his position do, a fine broad cloth coat, and waistcoat of silk, or some light material, satin or black silk tie round his throat. The lower part of his person was well protected from the cold, where, especially behind, it would have been very much better for his health to adopt the highland garb; but the chest, where it is so absolutely essential to keep good surface circulation, and prevent congestion of the blood vessels in the throat; the bronchial tubes and chest were, generally, according to almost universal fashion in this country, allowed to be exposed to the "free air;" this "free air" closing the minute capillaries, driving the blood from the surface of the skin, closing the absorbents, and preventing nutrition so essential to the covering of these vital parts. I ordered stout Scotch or lambs' wool under waistcoats, pants, and socks, a beaver cloth coat and vest, *the vest made to button up to the throat, and with short cloth sleeves, about six inches long*, silk scarf to replace the tie; to wear one of Maw's\* respirators whenever he went out into the cold, and always when driving or riding in winter: very little flesh meat, and only once a day, (mutton best,) potatoes or other vegetables, no stimulants at all, of course, and no coffee, but the diet recommended at page 29. I began with the following treatment while at my establishment, which soon told beneficially.

TREATMENT.—On rising, first morning, hot washing and soaping, sitz, and sponge down nearly cold. Second morning, dripping sheet, 70 deg. Third morning ditto. First forenoon foment chest twenty minutes, and wipe with wrung out towel; dress and have sitz seventy degrees, five minutes. Second forenoon, hot and tepid back wash four minutes, feet in hot water. Third forenoon same as first afternoon. First day sitz, 80 deg. six minutes, hot pad to chest while in, and feet in hot mustard and water. Third afternoon ditto, half chest silk compress and flannel body bandage, wrung out of warm water. Forenoon, fourth day, foment chest twenty minutes, wipe dry with cold dry cloth, then mustard plaister over throat and chest, sponge it off dry, and put on dry flannel chest compress, and do not damp compress till bed time, as the wet takes away the effect of the mustard, which is intended to bring out a rash, and must be repeated until the chest is relieved. Fifth forenoon, fomenting pack one hour, and tepid wash down. Afternoon, sitz, 80 degrees, six minutes, and afterwards mustard foot and head bath, eight minutes. wear woollen gloves in cold weather. Use the respirator when out in the cold. Little cold mutton to dinner, moderate vegetables and pudding; body bandage night and day, wrung out of warm water.

\* Maw, Aldersgate Street, London, 5/1 or post free 5/4.

TREATMENT OF A CASE OF HEART IRRITATION.—A gentleman, age 45, rather stout, married, and engaged in professional pursuits; of a bilious habit for some years; when younger, was careless or ignorant of the injurious effects of tobacco and stimulants. The pressure of his duties, as a solicitor, and the cares of a family began in a few years after marriage to tell upon his frame, although apparently robust, and from the Barber Surgeons' practice, (still in use to a great extent,) he was first recommended one nostrum, then another, one doctor condemning what the previous one had prescribed, all hap-hazard, and nothing but narcotics to soothe the nerves or allay the irritation of the heart. The irritation extended to the brain, so as often to incapacitate him from his duties; some drugs allayed the more distressing symptoms, temporarily, and a seton set at the top of the spine relieved the head for a time, the surgeon telling the patient that after it had been there some time he should heal it and set one in the arm! A pretty prospect for the already abused frame. One eminent surgeon ordered him to plunge into the river and swim across it, every morning for six weeks, in winter. Another physician, Sir P. C . . . , whom he consulted, said he could do nothing much worse; and for heart irritation, accompanied with a sense of weight and pain in the head, one would suppose nothing could be more likely to kill rather than cure. The gentleman came to me ten days since. The livid colour of his lips is gone, and an evident improvement in his whole system is already the result of the treatment named below. The body finds it has got into a course of treatment more in accordance with the laws of nutrition, and every day it is answering to the mild natural means used. The case being now under treatment, I cannot give the result, but from former experience in such cases I have not the least fear of failure. The gentleman formerly had gastric fever, a year afterwards rheumatic fever, and no doubt the irritation of the heart was contracted then. The vast advantage of our mode of treating rheumatic fever, is, that it thoroughly discharges it from the system, and we never hear of heart affections after, nor lingering pains and weakness in the limbs.

Prescription in the above case, first week; it is now February, a severe frost and keen east wind. First morning, on rising, soaping sitz, at 90 deg. only, and sponge down with 70 deg., only a few spongesfuls, stand on hot pad and have a wet cap on the head. Second morning, sponge over at 70 deg., standing on hot pad. Third morning, ditto. Forenoon, every day, mustard plaister below the heart, not upon it, having previously fomented

gently fifteen minutes, but keep the flannel low and not on the heart; this could be done sitting in a chair, with the feet in 100 deg. mustard and water. After this wipe with a cold dry cloth, gently, and put a piece of spongio over the heart, damped with hot water, and flannel end body bandage wrung out of warm water. Afternoon, sitz 80 deg. eight minutes, feet in 100 deg. mustard and water. Very little cold meat, very little potatoe, pudding good, but moderate, no treacle. Avoid anything that is bulky on the stomach; wear wet head bandage a good deal. The following was my prescription for the second week:—On rising, sit on a chair covered with a blanket, and feet in 100 deg. mustard and water; hold a hot pad to the lower part of the bowels. The bath attendant to rub all over the person with dry mustard. Wear a piece of spongio sprinkled with hot water, over the heart, and body bandage, with flannel end, wrung out of warm water: if the spongio is not comfortable, leave it off. Wear this bandage night and day. Forenoon, feet in hot mustard and water, for only three minutes, then put on mustard plaisters to the soles of the feet, and bandage them with dry calico, to keep the mustard plaisters on, then lie down and have a bump sheet towel doubled and wrung out of hot water, and laid on the bowels, from the pit of the stomach downwards, not to reach the heart. The blanket on which you lie, and which should be doubled, is now on one side to be brought over the wet cloth, and then lay on the fomenting can, filled with hot water, or if too heavy only half filled, then bring over the other side of the blanket, and wrap the lower part of the person in the blanket and macintosh; lie in this twenty minutes, keep the wet head cap on, and sip cold water. Afternoon, rub the head with hand and cold water, while the feet and hands are in hot mustard and water, five minutes. Bed-time, as on rising and also mustard plaisters on the soles of the feet all night. Diet, cold mutton every other day, with dried bread crumbs and gravy, moderate quantity; no vegetables, a little pudding; alternate days vegetables, gravy, and pudding. Breakfast, cold water, bread and rasher of bacon. Tea time, bread and butter and cold water, and light boiled egg. A raw egg, well beaten with a little warm water and sugar, immediately on getting out of bed. Have the rising treatment and the night treatment in your bed room. Before forenoon treatment a small basin of beef tea, no bread to it; before afternoon treatment, another egg, as on rising. Continue this if it suits; taking nourishment often will prevent the necessity of taking more than a moderate quantity at meals. Recline on the sofa a good deal; walk slow, and not far: if the feet are cold when reclining, have a hot bottle; it is very important keeping the extremities warm, and have woollen gloves all day this cold weather. Water drinking, to be sipping frequently, but never to take large draughts at once.

The following are copies of prescriptions this patient paid his guinea or half guinea fee for. The physicians wisely put their prescriptions in Latin, or the patient would not have had much faith in some of them, which were evidently more to satisfy the patient that he had value for his fee, rather than any expectation the doctor could have in their virtues:—

Diluted Sulphuric Acid, half an ounce, Syrup of Roses, one ounce and a half, Distilled Water, two ounces. Take one tea spoonful three times a day, in water.

Grey Powder, two grains, Extract of Gentian, sufficient quantity to form one pill. Make six. Take one every night.

Calomel and Powdered Antimonialis, each, two grains, Compound Extract of Colocynth, six grains. Mix in two pills. Decoction of Peruvian Bark, seven ounces, Tincture of

ditto, one ounce, Carbonate of Soda, three drachms, Volatile Salts, half a drachm, Syrup of Orange Peel, quarter of an ounce. Two table spoonfuls, with one of lime juice, to be taken three times a day.

Volatile Salts, twenty grains, Tincture of Ginger and Tincture of Cardams, compound, each one ounce, Tincture of Gentian, compound, three quarters of an ounce, Cinnamon Water, five ounces and a half. Take two table spoonfuls three times a day.

Hydriodate of Potass, half a drachm, Liquor of Potass, two drachms and a half, Extract of Dandelion, one ounce, Tincture of Orange Peel, one ounce, Infusion of Gentian, sufficient to make half a pint of mixture. Take two table spoonfuls three times a day.

Ammonio Sulphate of Copper, two grains, Bread Crumbs, sufficient to form twelve pills. Take one every day.

**CASE OF BRONCHITIS AND GENERAL DERANGEMENT OF HEALTH.**—A merchant, age fifty, rather stout, but for a long time with a tendency to weakness of the chest, aggravated whenever the digestive organs were out of order, causing difficulty of breathing and feeling of exhaustion, tried the usual medical mode of patching up until he became tired of its not giving him any permanent relief. Heard of my establishment, and came with a friend, and, as he remarked to me last evening, he, for the first time in his life, had received proper instruction how to live, to clothe, and to keep his body in good serviceable condition. The following is the first prescription book I gave him :—

First day, hot soaping, sitz, (pad on chest) four minutes, then sponge over quick with cold water. Second day, on rising, tepid sheet. Third day, on rising, as first. Forenoon, first day, foment front twenty minutes, and sheet nearly cold. Second forenoon, fomenting, wet pack one hour, then sponge nearly cold, standing on hot pad. Third forenoon, as first. Afternoon, first day, sitz at 90 deg.; hot pad to chest and feet in mustard and water 100 deg., wipe with wring out towel, run sitz down to cold before coming out. Second afternoon, sitz, 80 deg. six minutes, run down to cold one minute, feet in water 100 deg. every day, half chest compress night and day, calico body bandage in day, flannel at night wrung out of warm water. Moderate flesh meat, small quantity of cold mutton at dinner, vegetables and pudding. Forenoon, second week, first day, foment chest twenty minutes, then mustard plaister to bottom of throat and upper part of chest as long as you can bear it, then wipe off dry and put on compress without damping it again; after this, dress and have your legs to calves in hot mustard and water fifteen minutes, then rub with dry cloth. Second forenoon, hot and cold back wash, feet in hot water, holding hot pad to chest four minutes. Third forenoon; if the first forenoon treatment has not brought out much redness, repeat it; but if the chest is tender from the mustard repeat the second forenoon treatment. Fourth forenoon, spirit lamp and tepid sponge over, dress and have sitz 80 deg. five minutes. Afternoon, sitz at 80 deg. five minutes, afterwards hot mustard and water foot and hand bath eight minutes. Take a little cold mutton to dinner, and but little always. Now, and when you are at home, avoid hot ribs



of beef; but you may eat it cold. You will have to comply strictly with the necessary rules for your diet and clothing if you are to escape asthma or bronchitis, and to this end you must first avoid all stimulants, pastry, or anything indigestible, however it may tempt your palate, for if your stomach is out of order the mucous inflammation will immediately affect the bronchial tubes. Again, it is quite imperative to guard your throat and chest from cold, to keep up surface circulation; if this is attended to, you will often escape attacks, and prevent internal congestion. The outer waistcoat should have short sleeves, and button up to the throat, and in your case I would advise this plan, winter and summer, only in summer time have light material. The ordinary plan of waistcoats leaves the armpits exposed to suppressed perspiration, where the frame is so sensitive to it. Lambs' wool under vests in winter; middle, or what is called super merino for May or June when the weather changes, and light gauze merino for the hot weather. Always wear a flannel pad two thicknesses over the chest under your lambs' wool vest in winter, Always use the respirator (Maw's, Aldersgate Street, London) in cold weather, and on going out in an evening, if cold or damp it will not injure you, however much you use it, and when you go out in the cold with it breathe through the mouth. You may go out with this respirator on, in high winds, or any degree of cold, with perfect safety. I have personally proved this; my weakest point is the bronchial tubes. Eat sparingly, and take no suppers. All stimulants or tobacco are injurious to you. Avoid cold water shocks to your chest in cold weather, by having a flannel pad on when you take your cold dripping sheet. The tepid dripping sheet will be good for you, and cold washing sitz in summer.

EVENING CHAT AFTER TEA AT THE MATLOCK BANK HYDROPATHIC ESTABLISHMENT.—The pleasant tea table chat with our very social and agreeable company at the Hydropathic Establishment, will often be remembered when the company are separated far apart, and gone to their various occupations,—some to the East Indies, some to the West Indies, others to Australia, France, Spain, &c. We have had at table at the same time a West India planter, who formerly had his establishment of slaves, (so called), but who appear to have been anything but oppressed slaves, under his rule. He told us of the coffee, sugar, and cotton plantations, and luxuriant vegetation; the rivers swarming with alligators, and the serpents and the tigers on shore, and the heat and mosquitoes, and we were thankful to be in England. We had another at the same time from Ceylon, a coffee planter, telling us of the cinnamon groves, the beautiful climate, the Bhuddist's worship, the fruits, the absence of an English fog, but with many drawbacks in the shape of mosquitoes, serpents, ants, and a thousand forms of insect creation not very agreeable to European nerves. We have had a Spaniard, and others who have joined in the turmoil of revolution. Officers of the army at home and from India who have suffered from want of a knowledge how to keep their frame

in vigour, quite as much as those in active warfare. Some have left us for the scene of war and bloodshed—one for Lucknow, whom we are now anxiously waiting to hear from, of his escape. He will remember our quiet spot, and the glorious scene from our saloon windows over the romantic rocks of Matlock, the cheerful company, the morning and evening hymn, and the moon-lit valleys, as he promenaded in the outer saloon in the May evenings, all so quiet, so rational, so different from the wars of men's passions, blood and slaughter, murder and hellish inventions of torture. From two of our late visitors, one a solicitor in Arrican, on the confines of Burinahi, and another from the captain of the *Cœur-de-Lion* at Madras, I have received the letters at the end of this article. The solicitor came from London, broken down in health, unable any longer to peruse briefs or debate at the courts, fearing his days of activity were over, but was so renovated at my baths that he took an appointment in India; and left us in perfect health two stones weight heavier than when he came with his cadaverous liver disease complexion. Farther on is a letter I have just received from him.

The captain who saw the taking of the Redan and the Mamelon at Sebastopol, his home is indeed on the sea, — he is rarely off it. The Cape—the Red Sea—the Persian and Indian Gulfs, Bombay, Madras, Calcutta, China, Australia, New Zealand, America, are familiar places to him, and he, as well as ourselves, will long remember the watch night of 31st December 1857, which he and his wife spent with us at Lea Bridge. He is a truly christian man, and with his wife fears no evil, because he believes his Creator will order all things for good to them that love Him, and bring them safe into port when the voyage of life is over. Many wrecks have I seen who have, too late for health, but not too late for their immortal happiness, seen the great mistake they have made in not studying and obeying, in early life, God's laws for health of body and soul.

A late commander in the Royal Navy, forty years at sea, and never during the whole period twelve months on shore at one time, having had an apoplectic fit, has been with us a considerable time; he is for the first time in his life, able to see calmly and quietly the purpose of his creation, and that God intended and does intend the happiness of all his creatures, and though mistakes and errors may have been made,

there is reconciliation and happiness even with a dilapidated hull and the rigging blown almost away.

The desperate absurdity of the ordinary English dress is obvious often to invalids when mischief has been done. They can see how the inhabitants of cold countries protect the chest and bowels, regardless of the more uneomely parts, which are far better with this "free air" doctors not unfrequently recommend to the throat and chest. Men closely encased with tight fitting trowsers are dressed more like the theatrical harlequin than like the men of most nations on earth, which causes weaknesses and diseases that are permanent for life. Our old English doublet, buttoned up to the throat, and often of leather, kept the warm blood circulating in the trunk, and no doubt helped that feeling of daring and independence; for what is more likely to give a feeling of vigour and determination than the warm blood finding out every capillary vein inside and out of the trunk, carrying life in its stream? Depress this; obstruct the vessels of the bronchia, the lungs, stomach, liver, and of the bowels, and the man soon begins to find his vivacity sensibly lessened. I am no advocate for eoddling or hot rooms; take eare of the throat, ehest, stomach, the liver and bowels, and don't be so careful of the parts where there are no such vital organs; cold will do no mischief there, but the contrary. With our warm rooms and sadly too sedentary habits in the office or the manufactory, we are liable to want circulation in the feet and hands. I recommend woollen socks in winter, and as often as convenient walking out on the grass or the wet road without shoes and stockings, or stamp in some cold water to the aneles for four or five minutes. I go without shoes or stockings a forenoon or afternoon in winter out of doors and in the house with benefit. Being too soon for the train at the station a short time since, when there was snow on the ground, and seeing an acquaintance who was a good deal prejudiced against our plans, I took off my boots and socks, and to his amazement walked or stood with him in the snow till the arrival of the train, then put them on without drying the feet, and had glowing feet for the next twelve hours. Where there is tendency to irritation of the heart or any ehest affection, have the water for the foot bath 80 deg. and it will do great service for four or five minutes at a time. Having formerly had severe bronchial attacks (the bronehial tubes is my weak point) I have in severe weather, with thermometer at 25 deg., cold east

winds blowing for ten days, rode or walked over our hills early and late with perfect impunity. I wear beaver cloth coat, vest, and trowsers, the trowsers loose, and the vest to button close to the throat, with short sleeves, which keeps up an even temperature of the chest, by protecting the arm pits. I turn my coat collar up, and wear one of Maw's respirators, which protects the bronchial tubes internally and keeps the throat warm externally, and I defy the cold winds or the great changes of temperature. Doctors generally will not condescend to look after the tailoring or dresses of their patients; they see them under the hands of the tailor or the dressmaker, and slaves to the fashions of the day, and they know it is very hazardous to mention the impropriety of wearing clothing so little adapted to the preservation of health, as it might give offence, and so matters go on, and neither physic nor any treatment can cure, when nature's requirements in these things are not acknowledged and obeyed.

We have had ladies who have seen the fields of India, South America, and Australia, some of whom have been within the circle of war's hardships and horrors, and we have those whose health has been lost in anxiety and watchings in quiet retired places in England, and to all, some of our simple comforting bathing operations, so easy of application, would have enabled them to surmount hardships which have broken them down.

I have remarked on dress and habits on a previous page, and cannot resist reiterating my advice and remarks on those subjects, from the daily experience I have of patients coming to my Establishment from ill health, which has been, in a great measure, or altogether, brought on by not following nature's hints.

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I have just received the following letter from the Captain of a ship, who with his wife at my Establishment got important benefit, and directions how to use our application at sea.

John Smedley, Esq.

Bombay, December 28, 1857.

MY DEAR SIR,—Since we left home we have been at Aden, Muscat, Bashire, Bassadon, Hurrachie, and we leave here late in January, for Calcutta. We are glad to hear of your Establishment being finished, and of its being full of patients; surely you must have had an anxious time of it this last season. I trust many who came to you returned home better in both body and soul. I



am glad to hear that my brother is improving; he has had a sad chastening, but if it should be the means of renewing within him a right spirit and a new heart, it will be worth all he has gone through.

When I left home this time, I commenced having divine service on board on Sunday, and continued it until I arrived in Aden; but as soon as Jack got with his jolly friends on shore, all thoughts of good seemed to vanish. Half of my crew left me there, and I had to replace them with natives, so I have had more heathens on board than nominal christians. It is astonishing how hard and fast these fellows stick to their caste, and yet, when I have had only two natives on board, they were not so particular. If this caste could only be broken I think all the inhabitants in India would soon turn christians. What dreadful work has been going on here; of course you know as much about it as I do, only some things which are too shocking to print. When will war and bloodshed cease? I have been in the midst of it this three years. We have never tasted medicine since we left your health restoring Establishment, and I think we shall not be easily persuaded to take any again. We take now and then a pack, but every morning a shallow. I get out of bed and sit in the bath twenty minutes, then sponge myself well all over. I find it quite refreshing in this climate. In the Persian Gulf it was excessively hot; thermometer at 125 deg. in the heat of the day, and seldom below 95 deg. at night. At present here it is very pleasant—thermometer at 70 to 80 deg.; this, of course, is the cold weather season.

January 8, 1858.—I did not get this finished for last mail as I intended, so it will leave Bombay to-morrow. I am loading for Calcutta, and intend returning from thence to Bombay. My wife and myself are quite well, thank God. I hope Mrs. Smedley and you are the same. My wife finds the baths do her much good when she perseveres with them; but she is still very weak, and has never been herself since she came out of the allopathic doctors' hands. I would like to have her at your excellent Establishment for a month or two, for we cannot carry out all the necessary treatment in her case on ship board as we ought. In every other respect she enjoys good health. Our friends here cannot imagine how we live and keep our health without either wine or beer. There are very few of that class in India; they seem to think it absolutely necessary for the body to take stimulants. If you can afford a few minutes of your valuable time will you write me to Calcutta. Direct it to Captain ———, at Calcutta. I would like to hear how you are getting on. We are sorry to find so few Europeans who serve God in this place; in fact they show the natives a very bad example, for there are many who call themselves christians who never enter the house of God, whereas the natives never miss a

day without offering prayers to their imaginary gods. Remember us in your prayers. With kindest love to you and Mrs. S., we remain,

Your affectionate friends, ———.

The following is a letter from my former patient, the Solicitor alluded to :—

Akyab Arrican, 28th November, 1857.

MY DEAR SIR,—Mr. K. wrote to me from London and spoke of having passed a part of the summer in your quarter. He said he was glad he had escaped the danger of the sea, as it was reported that we had been lost (so I read it). We did escape in a wonderful manner, and our ship just reached the harbour to fall in pieces, and now lies on the beach here a sheer wreck. We are, thank God, removed from the scene of the mutiny or rebellion, and its attendant horrors. Every day now brings cheering news. Sir Colin Campbell is in Lucknow, and all will soon be quiet again. I have never had occasion to try packing as yet, but our daily ablutions are a modification of your practice. Even the natives pour over their heads and bodies three or four large goblets of water, held at arms length above the head. I find the sitz bath taken in the heat of the day, quite charming, and keep all the while in it wringing a large sponge over the head and body—no need of a covering over one here when in it. Almost at the end of November we have a few hours in the middle of the day uncomfortably hot, and at night only so cool as to admit of a single blanket even in a bed-room such as mine with no glass windows, but only venetians, which may be closed or partially opened at pleasure. I have been doing a good deal of business as a notary and pleader. Desiring my kind regards to Mrs. Smedley and all friends,

I remain, my Dear Sir,

Yours most sincerely, ———.

The following is a specimen of cases who have been so far restored by our mild life-giving applications, that they have long been able to enter again on their duties with comfort, and have only to regret they did not study and obey God's laws for their health and happiness sooner. Such cases have no possible chance of cure or relief by any other means :—

SIR,—I am so much out of health, and so nervous, especially so owing to the state of my sight, that I am anxious to make trial of Hydropathy, and therefore must make an effort to come to you. I was forty-two last October. My general appearance leads strangers to suppose me near sixty. My habits and professional duties, have told outwardly as well as inwardly. I not only

look old, but feel old. I have been a good deal troubled with constipation. I have all my life been of costive habit, but for some years past have derived considerable advantage from the constant use of brown bread. When the bowels do not act, the blood goes to my head, consequently adds just now to the inflamed state of the eyes, mentioned in my last letter. I suffer greatly from cold feet, and in weather like the present, am obliged to have much extra clothing (warm blankets) on my bed at night, as I have aching pains in my hips and bones generally owing, (a medical man once told me,) to the great quantity of mercury I had taken, which renders me susceptible to changes in the temperature; these aching pains destroy my rest. My digestion is very bad; everything I eat swells frightfully. I am also at times slightly troubled with rheumatism, and gouty sensations.

If you think such a long list of disorders can be benefitted at your Establishment, I shall be glad to avail myself of your assistance. I shall be glad to hear from you as soon as possible.

I am, Sir,

Yours most obediently, ———.

The following letter is just received from a late patient. He was told it was doubtful if he would ever recover, and had been under Allopathic, Homeopathic, and Hydropathic treatment for nine months previous to his stay of six weeks with our mild treatment, which soon enabled him to return to his duties.

“To the Patients, &c., in the Hydropathic Establishment, Matlock Bank, Derbyshire. February 24th, 1858.—Highly esteemed Friends, in fulfilment of the promise drawn from me by several of you on my departure from your healing ‘Gilead,’ and happy company, I drop you these lines to say,—the train by which I left Ambergate, this day fortnight, ran me into Yorkshire, where I spent a week among warm and well-tried friends, who expressed their astonishment and delight at my improved appearance and health. In four families I found some sick, and instantly prescribed and commenced Hydropathic treatment upon them, with success in each case; and so satisfied are they of its benefits, that three are coming in a few days to join you for a full course of treatment, and others, who cannot leave home at present, are practising upon themselves according to the directions I was able to give them.

Having sown this seed while inhaling a change of air, &c., I again took rail, and ran into the arms of my beloved family, whom I had not seen for nearly five months. Judge ye of the joy of our meeting, in my improved state of health and appearance, with such a prospect of *remaining* with them!

Tidings of my arrival quickly spread, and produced its effect on the members of our congregation, and on Sabbath (last) I took my pulpit again, for the

first time after more than twelve months inability, through heavy and complicated affliction, and performed the sacred duties morning and evening under very grateful personal feelings, and unmistakable signs of pleasure in about 1,000 hearers. But the best of all the Lord was in the midst of us, and crowned our first Sabbath's worship with his royal presence. Experiencing a little fatigue after the evening service, on reaching home I took a hot dripping sheet, then a cold one, rubbing dry, and retired to bed, after drinking a tumbler of 'cold water,'—nothing else after tea at five o'clock,—slept soundly, arose on Monday morning well refreshed, took a cold dripping sheet at half past six, a good walk, and then a hearty breakfast at eight o'clock. To-day my good wife told a friend that she felt concerned at my taking no refreshment after tea and the evening service but cold water! Hydropathics appear to many 'strange fish.' My taking a cold dripping sheet each morning the moment I turned out of a *warm bed*, produced peculiar sensations in my Yorkshire friends! The third morning I prevailed on a gentleman in the house to come into my room and witness the awful operation. The morning was a right one for my object, a hard and hoary frost, and just when day was breaking. I even prevailed on him to aid in rubbing my back, which re-acted well, and to his utter astonishment, my back quickly made the wet sheet *hot*, and sent up a famous steam! He was at once converted, and ordered a new sitz to be made like the one I brought with me. I prepared for my process over night by spreading my macintosh sheet upon the bed-room floor, and having a sheet put into a vessel of cold water, ready to have the luxury of a cold envelope, and then a good rubbing in a dry sheet, which removed the soft warmth of the bed, giving me in its stead, a harder glow of heat, by the extra rush of blood from my centre to my skin. Nor did I splash the carpet or furniture of the room. A little care and the macintosh sheet took the dripping water, which I returned to the vessel. I have thus learned that a traveller carrying a macintosh sheet, need not forego every morning his nerve-strengthening, and health-promoting cold dripping sheet.

I must mention the curious and melancholy sensations which seized me on my departure from the Bank. The great pleasure of soon being in the bosom of my family and flock with renewed health, was partially checked by the reflection of parting, and perhaps *for ever*, (in some cases) from those whose social, profitable and spiritual intercourse had rendered my sojourn so happy. I believe I shall never forget the morning and evening devotions which I enjoyed with you in that favoured Establishment. The soft music, the vocal singing, the marked attention paid to the reading of God's word, the proper decorum manifested at public prayer, and the general communion of spirit with spirit which obtained, irrespective of religious creeds, names or stations in life,



cannot easily be forgotten. We evidently felt as one happy family, voluntary all, and without restraint. This is a striking feature in that wonderful curative institution, and which I humbly conceive greatly aids in the restoration of health. And when these facts, and the comfortable entertainment and pleasant treatment there practised become better known, it must become the rendezvous of the very cream of society who may need renewing, patching, or cheering up. Innocent recreation, rambling walks, social readings by small parties of similar tastes in the 'recesses,' laughing chit chat, and sacred devotions, each in their place wile away time, and drive off dull care. In my view, the Bank is the very *beau ideal* of an Establishment to expel disease of *Body* and *Mind*, and fit its patients for the duties and enjoyments of both earth and heaven. Such are my present thoughts, after what I have there seen in others, and felt in myself. Peace, prosperity, and long life, be to its originators and proprietors, who, without earthly gain, seek to bless with health and happiness all without distinction, within their reach and means. Can we therefore wonder at the great relieving and curing success which crowns their treatment? especially as nature is *coaxed* and *soothed*, (not irritated and tortured by allopathic medicines, or by constant appliances of *cold* water, in cold rooms and cold bath-houses) and the Author of nature is acknowledged, consulted, and worshipped unceasingly, 'as the duty of every day requireth.'

Some esteemed friends will have left the 'Bank' since I came away, but doubtless their places will be more than filled up by 'new comers,' and I hope with quite as social, unstarched, and happy spirits. Also by this time the decorations of the saloons, &c., will be finished, or nearly so, giving increase to the general pleasure of the patients.

Hitherto not one day has passed without my thoughts tripping over to the Bank. My mind's eye often sees you, and "though I be absent in the flesh, yet am I with you in the spirit, joying and beholding your order." I could easily describe most of the positions, moods, &c. &c., of those with whom I had the pleasure of being a sojourner. But my gossiping pen must be made to "halt," suffice it to say, I hope all I left behind are cured, or fast approaching that desired "crisis;" (no "box" for this slip of the pen!) I expect Captains P. and S., Messrs. R., K., M., B., Misses B., M., S., Mrs. T., J., and H., are yet present with you, with a host more of both sexes, whose names I cannot just now call up—but to all mentioned and not mentioned I desire my kindest regards, not omitting the house steward, butler, servants, and bathmen, from any of whom a line "reporting progress" would please

Yours, very truly,  
J. P——."

ANOTHER CASE of Barber Surgeons' practice, extending over a period of 10 years, to 1857. A lady at 25 was troubled with pain at the bottom of the back, owing to internal irregularity. The surgeon, one of the most eminent in the city, rubbed caustic over the part, about the size of a five shilling piece, fifteen minutes; then ordered a poultice, which brought the part to a sore, as he intended, for a counter-irritant, intending to draw out, as he supposed, the inflammatory matter which caused the pain. A piece of dry cork was applied to the sore, and bound on, and renewed night and morning, causing intense pain. Medicine was given to "*regulate*" the constitution. The pain became so trying to the frame, after constantly keeping the place open three months, that the patient said she could bear it no longer. The place was healed up, and a blister placed over the whole of the lower part of the hips. When this was healed, cupping was tried all down the back; then leeches all down the spine. All these scientific means failed to give any relief, and the constitution evidently sinking under them, caustic internally, with the use of instruments, was then tried, with other applications, which gave immense suffering, and aggravated the original complaint tenfold. The next plan was to set a seton at the bottom of the back, where the first operations were commenced; this gave great torture, and the lady fainted several times on every dressing of it night and morning; forthwith blisters and heating lotions were applied externally, and stimulants internally, to rouse failing nature. The body had hitherto stood the siege which the surgeon had laid against it nobly, but it gave evident signs of succumbing to the scientific skilled practice opposed to it; dropsical symptoms appeared, and she came to us. The bowels were enlarged from effusion, and constipated to the last degree: the warm blood had been drawn away, and they would not reply to the weakened stimulus of the vessels. The surface of the bowels constantly cold, with intense heat internally. The brain, of course, sympathised in all this suffering, and a nearly constant racking nervous headache was the consequence. We began with our soothing applications, which neither offend delicacy nor the nervous system. First, got warmth over the bowels, and in the legs and feet, by our nice bandages and fomentations, &c. Then the bowels acted, and as a necessary consequence of increased vitality, the distension of the bowels and the enlargement of the lower part of the frame began

to subside, and appetite followed; and we saw the reward of our labour, and the blessing of God on the natural restorative mild water treatment.

**PROOF OF THE SUCCESS OF THE MILD WATER TREATMENT IN THE MIDDLE OF WINTER.**—The case, as will be seen, was a very delicate one.

—, 26th February, 1858.

DEAR SIR,—I can scarcely believe that it is three weeks since I left your Hydropathic Establishment at Matlock Bank, but so I find it to be: so swiftly does time pass away. I have delayed writing till now that I might see how I felt, and prove the permanency of the benefit I derived under the treatment. I am pleased to inform you that I continue to improve, and believe I shall be stronger than I have been for years, and with the important knowledge I learned from you, I shall be able, under ordinary circumstances to preserve my health. I continue the treatment at home as you prescribed to me, and shall, as far as circumstances will allow. I take a dripping sheet every morning, and two sitz baths per day. I have not preached since my return, as I have a supply taking my work, and my friends think it advisable that I should not begin too soon after so long and serious an illness. I do not expect to resume my regular duties till about the middle of next month. I have considerable crisis come out on my legs and arms since my return. I cannot express the gratitude I feel to Almighty God that he directed me and opened the way for me to come to your Establishment, and to you for your great kindness to me while there. I believe I owe my restoration to health, yea, my present existence, under God's blessing, to the Hydropathic treatment. Nearly the whole of last summer I seemed to be like a shipwrecked mariner, lying on life's last shore, struggling to get to sea again. The medical man who attended me furnished me with the best oars and sails his skill could provide, and at times I seemed to be in a fair way for getting to sea again, and then an adverse wave would beat me back again, and then all observers, and even the skilful doctor said, I must die. I did not wish to die so soon, although I had no doubt respecting my acceptance with God. The thought of being separated from my affectionate wife so soon after our union (scarcely two years), and leaving her in a cold unfeeling world, with no provision save the promises of our Heavenly Father, weighed heavily upon my spirit. Under these circumstances, amid extreme weakness of body, my only consolation was in the cheering promises of the Bible, and in the glorious hope of a better world. I had reason then to bless God, and still have reason to bless him, that I was led to embrace religion early in life. When I was a little more than sixteen years of age I was enabled to say, "I know in whom I have believed." For fourteen years I have endeavoured to serve my

God, and he has not failed or forsaken me. I was at last recommended to try cold water, I did so; I began by using a wet towel, well rubbing myself on rising every morning, and drinking two or three tumblers daily. This benefited me considerably. Then I was recommended to your Establishment. I stayed over eight weeks. I regard these as among the happiest weeks of my life. I look to December 1857 and January 1858 as constituting an epoch in my history. I often think with pleasure too of those seasons of hallowed enjoyment spent in the delightful exercises of prayer and praise, and reading the Holy Scriptures, which tend so much to promote that harmony of feeling which prevails through the Establishment; also those pure and elevated principles which regulate the whole. Now that I am far away, I daily pray that the blessing of God may attend you, and that many blood-bought souls may be the crown of your rejoicing in the day of the Lord.

My friends observed a striking change in me for the better on my return, many of whom never expected I should recover. I called upon my late medical attendant to pay his bill. I expected he would have questioned me about the treatment, but he only remarked that he understood I had been to an Hydropathic Establishment. I told him, I had, and where; he then said that he believed a great deal of the benefit persons derived from such Establishments, was from the healthy locality of the Establishments. I thought within myself he admits a great part, but not the whole truth. He admitted that people were benefitted by going to Hydropathic Establishments, but he wished to ascribe the benefit to the salubrious air in the locality of the Establishment. Yesterday morning I met him; he said "you are looking better, the dry winter has done you good," and laughed, and then galloped away. I believe in his heart he acknowledges the good I have derived from the treatment, but does not like to say so.

Again returning you and Mrs. Smedley very many thanks for your kindness, with christian regards and fervent prayers.

To J. Smedley, Esq.

I am yours, truly, ———

MISCHIEF OF EARLY EDUCATION. COMMON AND HOPELESS CASES OF CURE BY ANY DRUG REMEDIES, and only partial restoration by any others. A lady, age about thirty, had been highly educated when very young, taught several languages, began to learn Latin at four years old, and as a natural and certain consequence such a training drew the nervous fluid or vitality from its proper office of developing the bodily frame, and made her one of the very numerous class of invalids who can only get on in life with the



help of warm rooms and carriages and nursing ; unfit for any active exercise, or the active duties of every day life ; name constantly in the doctor's ledgers, and one of the numerous class who keep up the physicians' status in society, and enable him to drive his brougham and give good dinners. When will parents study the natural and necessary conditions of healthy developement ? At present the practice of enfeebling and ruining the constitution in early life is in full force. I often argue the subject with parents, but rarely to any good result : they are so afraid of their children not being as clever as others, that they most effectually defeat their very reasonable desires by starving the body, depriving it of its due share of nervous vitality to supply the brain for these accomplishments, which, when acquired, the body has often not vigour to use. "I give my children so very little schooling," says one mother, "they could not have less and not be very ignorant ; I only permit them to be under their governess so long during the day, which is surely very little." I in reply point to the difference betwixt their sensitive, delicately formed children and those of the labouring population, and the difference, not only in bodily conformation, but in the unnatural gravity and air of older people, which polite society so much admire : the "quiet manners," no "vulgar boisterous ebullitions." But what does this prove ? Why that in these cases the brain has been drilled into what is not natural, it is already burdened with thought. The labourer's child is natural, light, joyous, when fed and clothed ; and even when they see around them misery and privation it does not depress them, they are not taught to look on the vicissitudes of life with concern ; that will come time enough, and when nature has given them a frame to bear them. Not so with those in circumstances above these, all is artificial. Girls and boys have the manners, the ambition, the cares, the fears, and the hopes of adults ; and the adults have a double share, and an early injured frame to carry them ; so life is often miserable and a burden, and the seeds of sorrow and anxiety handed down from generation to generation. Besides this early brain work, stimulating flesh-meat and drinks are used instead of a purely vegetable and farinaceous and milk diet, which would give them muscle and less fire. I have been greatly struck with the difference between my free hospital patients and my Establishment patients. The former are all of the labouring class, the latter of the educated classes. The labouring class

are cured of diseases at my Establishment in one third of the time usually that the others require, and the more difficult cases of nervous dyspepsia are comparatively rare in the labouring class, whilst they form the majority in the other.

The following is the introductory treatment in several cases of this kind, followed by more active treatment as the frame could bear it, and which succeeded in restoring in a wonderful manner. Such cases we could give references to.

**TREATMENT.**—On rising have feet in 100 degrees mustard and water, and hold hot pad to bowels; then have a dry mustard rubbing all over the body; then put on all the compresses, damped in hot water, and woollen vest, whilst feet are in hot water; then rub feet with cold water and hand till warm, and finish dressing; when dressed take a two minutes quiet sitz, 65 degrees, and get to cold as soon as you can; to be taken in running sitz bath, and very little water. *Forenoon*, have head bath 70 degrees five minutes, then foot and hand bath in 100 degrees mustard and water five minutes, then rub each hand and foot separately with cold water and hand till warm; take another two minutes sitz as on rising. *Afternoon*, have a towel spinal rubbing, 80 degrees, three minutes, whilst feet are in 100 degrees mustard and water, and hold hot pad to chest and bowels, and sit upon hot pad; then re-damp compresses, and rub feet with hand and cold water, and when dressed, take a two minutes sitz as usual. *Bedtime*, take hand bath 70 degrees five minutes, and then put feet into 100 degrees mustard and water for three minutes; then put on wet and dry socks, only wetting the soles of socks in hot water; if compresses are dry, re-damp them as before; if damp, leave them alone. **DIET:** before rising have a raw egg beaten well in warm water, and a little sugar. *Breakfast*, have a rash of fat bacon and white bread, and a cup of weak black tea. Before forenoon treatment, have a cup of beer tea and a little toast; dinner, a little meat and vegetable, and pudding and stewed fruit. *Before Afternoon* treatment have another raw egg, as on rising. Tea, as breakfast. Supper, a little arrow-root, or sago creed with water, and one tea-spoonful of brandy in a bason of it; no toast nor bread; drink cold water by sips all day, especially whilst under treatment. Mr. Monk's Exercises (Ling's) gently once a day. Never go out of doors without goloshes, and respirator, and not at all in strong winds. At present have no treatment, but wear the body bandages night and day; and then on the second night, have a tepid sitz for two minutes; *third day*, have a just tepid, morning, noon, afternoon, and night; *fourth day*, have a cold two minutes every two hours, and continue this until quite stopped; on third day also put body bandage on wet.



## MATLOCK BANK.

## ON LEAVING HOME FOR MATLOCK HYDROPATHIC ESTABLISHMENT.

WHEN far from my home, the lov'd home of my husband,  
Whose form is indelibly fixed on my heart,  
With mingled emotions, I think of the moment  
When painful affliction compelled us to part.

I was up in the morning, e'er the lark began singing  
Her sweet song of praise, to resound through the sky ;  
I could not delay, for the time was approaching  
When I must away from my home, in the "Fly."

I crept to the room, where my infants were sleeping ;  
It was dark, very dark,—I would not them awake ;—  
I kissed their loved forms,—press'd them close to my bosom,  
And felt,—O, I felt—that this full heart would break !

I descended the staircase, my husband was waiting,  
With breakfast, all ready to strengthen my frame ;  
I partook of it lightly ; my tears were fast flowing :—  
To attempt to repress them, alas ! were in vain.

We knelt by the sofa, and sent up a prayer  
To our Father, in heaven, that He would defend,  
Protect, guard, and shield me from peril and danger,  
And conduct me, in safety, to my long journey's end.

We took a farewell. The scene I pass over—  
Better felt, than described, is the heart-rending pang,  
When fond hearts are severed, at a distance to dwell,  
The one from the other, in a far remote land.

Great God ! hear my prayer,—in mercy restore me  
To my husband, and children,—the loved of my heart.  
Ye moments, fly swiftly, that I may behold them,  
Never more to be severed, till death do us part.

## FAREWELL!

LINES WRITTEN ON LEAVING MATLOCK BANK FOR HOME, GREATLY  
RESTORED IN HEALTH, FEBRUARY, 1858.

FAREWELL, my dear friends, I am going to leave you,  
To return, in sweet peace, to my own happy home;  
Many hours we have passed in lov'd converse together,  
But now I am waiting, in haste, to be gone.

My husband is watching, with love, to receive me,  
With kind, tender smiles, he will hail my return.  
My children are longing, once more, to behold me,  
While their dear little hearts with intense love, do burn.

Farewell, Captain P——, \* God's blessing be on thee,  
And shield thee from danger, by night, and by day.  
I will breathe forth a prayer to my heavenly Father,  
For thy welfare and peace, when I'm far, far away.

Farewell, brother P——, in love, I esteem thee,  
For thy labour, and faith, in the gospel of peace.  
Press forward—undaunted, let nothing deter thee,  
Or hinder thy growth, in the garden of grace.

Farewell, men and maidens, both men and women,  
With Fred, Bob, and Johnney, and kind hearted Ben;  
I am sorry to leave you,—'tis likely, most likely,  
I never—ah! never, shall see you again—

Till we meet on the morn of the great resurrection,  
When each shall arise, at H's call from the tomb;  
All nations shall meet, at the bar of Jehovah,  
To hear from the Saviour their sentence and doom.

May we, lov'd friends, be found with the "number"  
That have "washed their robes in the blood of the Lamb."  
May we hear the glad sound, "Come ye bless'd of my Father,"  
"Inherit the kingdom," possess the good land.

Though absent in body, we still may be present  
In spirit, our praises co-mingling on high;  
Our watchword be "Onward," till we reach the blest summit,  
Where every tear shall for ever be wiped from our eyes.

S—— J——.

\* Commander R.N, who has been forty years at sea.



**LOSS OF VITAL HEAT WHILE DRESSING.**—This deserves especial notice ; for, in cold weather, the good effect of the bath is often lost, and positive mischief done, by not fully dressing soon after the bath. Persons get their bath, get good re-action, and then let this subside by being exposed while finishing their toilet. They should avoid this in cold weather, or better not use water at all. Then, again, to feverish habits, cold water is highly agreeable and refreshing, but in these cases great care should be observed to use cold water moderately, because it so much more easily excites the frame. Moderation will do great good in such cases, and take away the hectic flush, and soothe the feverish skin. Of all things avoid cold sponge baths and towel drying ; have a sheet to dry with after the sponge bath, or any other bath. While the towel rubbing is going on, the body is exposed, and the vital heat rapidly evaporates, and, in delicate cases, to their great injury.

**A FEW MORE LINES ON THE SIN OF INJURING THE BODY AND SHORTENING LIFE BY THE USE OF TOBACCO.**—A patient, to day, has described to me the bondage he and his friends were in, to tobacco. He, happily for himself, came to my establishment last summer, and broke the spell. It was, however, so strong, that, in face of his convictions of the mischief it was doing him, he could not resist taking a pipe now and then, which was followed by the promptings of conscience, that he was indulging in what had already so seriously injured his health and his usefulness. He has now, however, I believe, got quite over the temptation, although he has smoked for upwards of thirty years ; and his present excellent health, vigour, and peace of mind, now well repay him for the sacrifice. He took a few pipes three or four months since, and the consequence was a fresh crisis, his frame having been so much invigorated by the treatment last summer it would not bear the presence of this narcotic in the blood, but immediately threw it off in a rash on the skin.

The grand principle of Hydropathic treatment, is, that it so invigorates and purifies the whole system, that the laws of nature, which will not bear the presence of morbid matter in the system if there is power to expel it, comes into full force, and the poison is no sooner put in, but the healthy tissue, glands, &c., unless overpowered, are offended by it,

and set about throwing it off by crisis, diarrhœa, &c. Many who are horror-struck at the sight of a drunkard destroying himself body and soul, are quite easy when performing the same operation upon themselves in a way slower and less offensive to society, but which nevertheless is suicide after all, simply to gratify the depraved nature.



Touching for the King's Evil, or Scrofula; commenced by Edward the Confessor, and continued to Queen Elizabeth's time, A.D. 1590.

QUOTATIONS FROM AN OLD BOOK.—The following quotations are taken from an old Book, the title of which I give below, and are selected from a great number, many of which are too disgusting to

read. They shew that curious compounds were recommended in those days, and surely if some of the physicians' prescriptions of the present time were put into plain English, and the patients made aware of their composition, they would see a great similarity between the two in poisoning the body with these nasty compounds.

"A Rich Storehouse, or Treasury for the Diseased. Wherein are many Approved Medicines for divers and sundry Diseases, which have been long hidden, and not come to light before this time. First set forth for the benefit and comfort of the poorer sort of people, that are not of ability to go to the Physicians. By G. W. And now seventhly augmented and enlarged by A. T., Practitioner in *Physic* and *Surgery*. LONDON: Printed by RICHARD BADGER, for *Philemon Stephens* and *Christopher Meredith*, and are to be sold at the sign of the Golden Lion, in *Paul's Church-yard*. A.D. 1631."

*An approved Medicine for any Ache or swelling, and likewise for any Sinews shrunk or perished.*—Take best Thyme, Lavender cotton, Knotty Strawberries, of each of them one handful, and cut and beat them in a mortar, and when you have so done, then take ten or twelve young Swallows out of the nest, being ripe, and beat them in a mortar, (feathers guts and all with the herbs) until you cannot perceive the feathers, and then take half a pound of fresh Butter, unsalted, and mingle them together, and let them stand for the space of four and twenty hours: then seethe and strain them into a Gally pot, or else into some earthen vessel. And so use it twice a day, in anointing of the place where the grief is, and in five or six days it will be whole. This hath been often proved.

*A very good Medicine for an Ague.*—Take the Grease or Fat that is under the manes of horses, and melt the same in a new earthen pot, and strain it into a gally pot or some such thing, and when the patient feelth the Ague coming, let the Chime of his back be anointed therewith, and within nine days he shall be whole, keeping in the mean space a reasonable diet.

*A very good Medicine to stanch blood.*—Take a Toad and dry him very well in the Sun, and then put him into a linen bag, and hang him about the neck of him that bleedeth with a string, and let it hang so low that it may touch his breast on the left side near unto his heart, and com-

monly this will stay all manner of bleeding at the mouth, nose, wound, or otherwise whatsoever. *Probatum est.*

*An approved good Medicine to break the Stone.*—Take a Cock of a year old, and open him, and you shall find in his Maw small white stones, which when you have found, wash them very clean, so that there remain no filth at all amongst them; then take them and beat them in a Brazen mortar to a very fine powder, and then put it into the best White-wine that may be had, and then let the party grieved drink thereof, every morning fasting, and this will break the Stone, and cause it to avoid in shivers.

*A foreign Medicine for a Web in the eye.* Take a good quantity of Snails, with their shells upon them, and wash them very well, and then distill them in a common Stillatory, then take of the Galls of Hares, red Currall, and Sugar-candy, and mingle them well together, with the said Water, and distill them again, then take the same Water and put it into a Glass or Vial, and when you will use it, take a drop thereof, and put it into your eyes, both morning and evening, and it will help you.

*A good remedy for the Falling Evil.*—Take the Brains of a Weasel, and dry it to powder, and put it into some pure Vinegar, and temper them well together with a knife or spoon, and give it to the diseased person to drink, and it will do him exceeding much good. *Probatum est.*

*An excellent good Ointment for the Gout.*—Take a fat Goose and pluck her, and dress her as if she should be eaten: then stuff the belly of her with three or four young Cats well chopped into small pieces, with a handful of Bay-salt, and twenty Snails, and then sew up her belly again, and roast her at a small fire, and save all the dripping of her, and keep it for a precious Ointment, as well for the Gout, as also for all other kind of diseases in the joints. *Probatum est.*

*A Medicine for the Yellow Jaundice.*—Take Earth-worms, and wash them and slice them, then take a little scraped Ivory, and English Saffron beaten to powder, and mingle them together with White-wine, and let the Patient drink a good draught thereof first and last lukewarm, and it will do him marvellous much good.



*The following Extracts are from "FRUITS AND FARINACEA THE PROPER FOOD OF MAN," by J. SMITH. London, John Churchill, Princess Street, Soho, price 5s. A most valuable work, and well worthy perusal.*

"THE ultimate object of animal life being pleasure, the law of self-preservation, or the love of life, will remain in full force so long as the sensations of pleasure are not outweighed by those of pain, or until the organs of sense become indifferent to their accustomed stimuli. Every creature, therefore, is so wisely constructed, and endowed with such instincts, as induce it to make choice of those means which are best calculated to maintain and preserve its existence: were not this the case, animal life would soon terminate.

"But as individual life has a commencement, so also has it an end; and though the laws of nature should be at all times implicitly obeyed, and circumstances should be of the most favourable kind, yet there is a limit beyond which none can pass,—when vitality must yield to the universal range of chemical influence. Even man, the last and most complete result of Divine workmanship, is no exception to this general rule; nor can all his wisdom and intelligence reveal to him the means of escaping the sentence passed upon the father of our race:—'Dust thou art, and unto dust shalt thou return!' This, however, should not deter him from investigating the laws of mortality, and the causes which hasten or protract the period of old age and death. 'Know thyself!' was the advice of the ancient sage; and it is still further enforced upon our attention by the well known line of Pope, —

'The proper study of mankind is man.'

It should, indeed, be our first endeavour to become acquainted with our position in the universe;—to mark the relation in which we stand to surrounding objects; to inquire how health and happiness, present and future, may be best promoted; diligently and faithfully to examine in what cases we have misconceived or departed from the laws of nature, by the observance of which health may be maintained, and longevity promoted; and, finally, to ascertain by what means physical and moral evil may be diminished, and the universal reign of peace and harmony established.

"The man who would enjoy the greatest happiness for the longest

period, should first determine the laws which influence health, for upon this depends a material portion of human happiness; and, secondly, he should endeavour to discover what subjects are most worthy of his close attention and steady pursuit. Clearly and fully to ascertain these important points, requires no slight consideration; but, having once satisfactorily settled these weighty questions,—so far as our present knowledge will permit us, we should resolutely practise what reason shows to be most desirable; and habit, once gained, will render the future pursuit easy and pleasant.

“The superior endowments of man place him far above the rest of creation; so that he is not under the necessity of submitting, in all cases, to the dictates of instinct and passion; for by the possession of higher intellectual faculties, he is enabled to resist, and greatly to modify, the simple suggestions of nature. In many instances, however, man has abused this privilege; for instead of using his reason as the handmaid, guardian, and assistant of instinct, he has placed them in collision; and the uses of the one, have been perverted and overborne by the mischievous meddling of the other. Hence the formation of unnatural and injurious habits; which have become as powerful as original instincts, withdrawn his attention from his best interests, weakened the true principle of his nature, and entailed upon himself and society, sickness, vice, and misery.

‘Reasoning at every step they tread,  
Men yet mistake their way;  
While meaner things, by instinct led,  
Are rarely known to stray.’

“When, by daily repetition, and by the powerful influence of social intercourse and national prejudice, habits have been long established, emancipation from their control becomes an almost impossible task; and when either practice or opinion is nearly universal, its propriety or truth is seldom questioned. If, by any means, the attention of an individual be directed to the consideration of a generally received opinion, and he arrive at a conviction opposite to that of the society by which he is surrounded, there is little chance of his making many converts; nay, the probability is that, however clear and confirmed his views may at one time appear to himself, he will gradually yield to the overwhelming influence of example, and the frequently expressed opinions of

his associates ; for a weak objection acquires all the force of a strong one, by repetition. If, however, a man have sufficient decision and courage to depart from the usages of society where he considers them wrong and injurious, or resolutely and perseveringly to maintain any unpopular belief,—more especially if opposed to the appetites and pleasures of mankind,—he may calculate upon his being laughed at for his singularity, and perhaps subjected to the daily jeers and witticisms of those who are carried along the stream of public opinion or local customs. The doctrine or practice is attributed by them to whim, caprice, eccentricity, or some still more unworthy motive. Every new opinion, therefore, though capable of the clearest demonstration, must necessarily be slow in its progress. Most people are so busily engaged with their daily avocations, that they have no leisure to consider a subject which demands time and attention, and less inclination when that subject is represented as a novelty. Some, perhaps, though convinced, deem it of too little consequence to demand a change of habit ; while others possess too little moral courage to brave the taunting observations of their companions. Thus are the same customs continued through long periods of time ; and the thinking few are held in thralldom by the unthinking many, so that the ‘discoveries of one generation can only become the established and influential truths of the next.’

“ It is however, our duty and interest to inquire, how far the practices and habits of mankind accord with the original intentions of nature, and what effect any departure from truth, if I may be allowed the expression, has had upon our health, happiness and longevity.

“ But as, without bodily health, physical strength, and mental vigour, man is rendered miserable, and incapable of securing to himself that full amount of enjoyment and longevity which nature has placed within his reach, and qualified him for attaining ; he should carefully note all such circumstances as exercise a direct or indirect influence over the development of his organization, which is the foundation, upon which the superstructure of all that is great, good, and desirable in human nature must be erected.

“ *Evidence from the writings of Moses and from tradition.*—Information respecting the Original Food of Man is necessarily included within very narrow limits ; but all accessible sources are decidedly in favour of its having been derived from the vegetable kingdom. Sacred and profane

authors unite in representing the progenitors of our race as frugivorous. At a subsequent period, they are stated to have fed upon plants of a more herbaceous character; and, at a still later period, they are recorded as having become 'riotous eaters of the flesh' of other animals. These periods are also characterised by different states of innocence, virtue, justice and happiness; and correspond to the golden, silver, brazen, and iron ages of the poets.

"Moses, after describing, with great force and beauty, the progress of the creation, and finally the production of Adam, or man, thus proceeds;—'And God said, Behold I have given you every herb bearing seed which is upon the face of all the earth, and every tree in the which is the fruit of a tree yielding seed;—to you it shall be for meat,' (Gen. i. 29.) Here we have plainly and distinctly stated, what God intended should be the food of mankind; and which, no doubt, would be best adapted to his nature, most conducive to his health, happiness, and longevity; and the best calculated (so far as food is concerned) for preserving purity of mind, and for subjugating the passions to the mental powers. Man, at his first creation, was placed in a situation in which he might find abundance of such delicious fruits as were adapted to please his eye, gratify his taste, and contribute to his mental vigour; for we are further informed, that—'The Lord God planted a garden eastward in Eden; and there he put the man whom he had formed. And out of the ground made the Lord God to grow every tree that is pleasant to the sight, and good for food: the tree of life, also, in the midst of the garden; and the tree of knowledge of good and evil.' (Gen. ii. 8, 9.) 'And the Lord God took the man, and put him into the garden of Eden to dress it and to keep it. And the Lord God commanded the man, saying—Of every tree of the garden thou mayest freely eat; but of the tree of the knowledge of good and evil, thou shalt not eat: for in the day that thou eatest thereof thou shalt surely die.' (Gen. ii. 15—17.)

"No one, I think, can mistake the language here employed, or arrive at any other conclusion, than that fruit and herbs bearing seed, were expressly granted as the food of man; and we shall find that his organization was in perfect harmony with this divine command. He was placed in the garden of Eden, or 'garden of delight,' that he might 'dress it and keep it,' for the purpose of supplying him with all such



fruits as were 'pleasant to the sight and good for food.' Some have contended that, this food is not sufficient to sustain the health and vigour of man; but we may rest assured, that what is of divine appointment, will be amply sufficient to produce the effect intended.

"In the works of the Greek and Latin authors, we meet with frequent allusions to this period, in which man lived in a state of innocence and happiness:—the 'golden age,' when he fed upon the delicious fruits of the earth; when his bodily strength and mental energies were in great perfection; when human life extended through such long periods of time, that the men or heroes of those days were considered immortal.

"Dr. William Hillary, in his *Inquiry into the Means of Improving Medical Knowledge*, says:—"Their food, during the first ages of the world, was taken from and chiefly consisted of vegetables, and their fruits and seeds, with the addition of milk from their flocks; and water was their drink.' He also infers that, as their food was plain and simple, their diseases were also simple and few, and therefore more easily cured,—either solely by the efforts of nature, or, when the assistance of art was necessary, by the help of a few simple medicines or applications,—than they were afterwards, when diseases were increased, and more complicated by the various inventions of luxury. Porphyry, a platonic philosopher of the third century,—a man of great talents and learning, and of very extensive research and observation,—investigated the subject of human diet with great care and diligence. He says:—"The ancient Greeks lived entirely on the fruits of the earth.'

"Hippocrates and Celsus confirm these statements respecting the primitive regimen of mankind; and, in fact, 'all writers of antiquity, of every nation,—historians, physicians, philosophers, and poets,—assert that the first generations of men, who lived nearly a thousand years, were perfectly natural and simple in their diet.'

"How long mankind continued to live upon the simple productions of the earth, we have no means of ascertaining. St. Jerome, Chrysostome, Theodore, and other ancients, as well as moderns, maintain that all animal food was strictly forbidden before the flood: but, long before that event, they had transgressed the law of God; and there can be little doubt, that the flesh of animals had, for some time previously, formed a material part of their diet. We read, that 'all flesh had corrupted his way upon the earth;' and that 'the earth was filled with

violence through them : ' and God said—' Yet his days shall be an hundred and twenty years. '

"When the Deluge had swept away the first generations of man, permission appears to have been granted to him to eat flesh-meat ; as we learn from the following words :—' Every moving thing that liveth shall be meat for you ; even as the green herb have I given you all things. But flesh with the life thereof, which is the blood thereof, shall ye not eat. ' I am aware that certain advocates of a vegetable diet take a different view of this, and some other passages of scripture, and believe that the flesh of animals for human food is still prohibited. I am inclined, however, to admit the full force of such passages ; and to acknowledge that man is not since the flood, restricted by the law of God from partaking of animal food. It was, doubtless, foreseen by the Omniscient, that mankind would, in obedience to his command, ' be fruitful and multiply, and replenish the earth ; ' that they would, in consequence of emigration and various other causes, frequently be placed in such circumstances that fruits, roots, rice, wheat, and other grains, could not be procured. Man, however, is so admirably organized, as to be capable of inhabiting every clime : he is not only to ' replenish the earth, ' but to ' subdue it ; '—to bring it into a state of universal cultivation, and to ' have dominion over everything that moveth upon the earth. ' In accomplishing these divine purposes, he would frequently be exposed to great privations ; for as grass, and other inferior herbage, affording support to herbivorous animals only, are the sole productions of cold climates, man would be under the necessity of becoming carnivorous, until art and industry had rendered the soil of any newly inhabited part of the earth fruitful and productive. Plutarch, in reference to this, observes—' And truly, as for those people who first ventured upon the eating of flesh, it is very probable, that the sole reason of their doing so was scarcity and want of other food. ' If, then, the original restriction as to food had not been relaxed, man, in obeying the impulses of nature to preserve his own life, would have broken the law of God ; but the moral and physical laws of an all-wise Creator, are always in strict conformity with each other. Man was to increase, multiply, and replenish the earth, and subdue it ;—to have dominion over all animals, in all climates : it is therefore consistent with all

correct views of divine government to expect, that he would receive such an organization from the divine hand, as would render him capable of subsisting on the greatest variety of food,—the productions of all climates; with full liberty to use all such as he might be induced, by his instincts or reasoning faculties, to adopt, as circumstances might require. The flesh of animals, therefore, could not be excepted; for, in many climates, no other food could be procured.

“But we are not thence to infer, that the digestive organs of man are the best adapted to an animal or even a mixed diet (the contrary of which I hope to prove hereafter); nor are we to conclude, that because animal food is permitted to man, therefore a more wholesome diet cannot be employed in situations where it can be procured. We must be careful to distinguish between divine permission, and divine command: there is a kind of relative fitness in morals as well as in physics; and what may be convenient and lawful in certain circumstances, may be highly improper in others, or under a different dispensation.

“Without any disparagement to the cause of vegetable diet, therefore, it may be conceded, that animal food was permitted after the deluge, when ‘men began to multiply on the face of the earth.’ But long after this event, the Patriarchs and their descendants confined themselves principally to a vegetable diet; for fruits, honey, milk, butter, bread, and some simple preparations of seeds and mild herbs, were the plain, healthful food of the people for many ages afterwards. On joyous and festive occasions the fatted calf was killed; but their usual diet was derived from the vegetable kingdom, and the produce of their flocks and herds; and, even to this day, the inhabitants of Syria, Mesopotamia, and other countries, live after the same manner.

“Assaad Yokoo Kayat, a native Syrian, in a speech at Exeter Hall, (May 16, 1838,) remarked, that he had lately visited Mount Lebanon, where he found the people as large as giants, and very strong and active. They lived almost entirely on dates, and drank only water; and there were many among them one hundred and one hundred and ten years of age. Buckhardt, also, in his remarks on the Bedouins, says:—‘Their usual fare (called *ayesh*) consists of flour made into a paste with sour camels’ milk. This is their daily and universal dish; and the richest Sheikh would think it disgraceful to order his wife to prepare any other dish, merely to please his own palate. The Arabs never indulge in

animal food, and other *luxuries*, except on the occasion of some great festival, or on the arrival of a stranger. If the guest be a common person, *bread is baked* and served up with *ayesh*; if the guest be a person of some small consequence, coffee is prepared for him, and also the dish called *behatta* (rice or flour boiled with sweet camels' milk), or that called *fleta* (baked paste, kneaded up thoroughly with butter); but for a man of some rank, a kid or lamb is killed.'

"In process of time, however, the use of animal food became much more prevalent, particularly in temperate and cold climates; and there is every reason to believe, that cruelty, immorality, and disease, marked the progress of man in this unnatural diet.

"There are few who doubt that fruits, &c., were the original food of man; and I trust the evidence already presented, will tend to produce conviction in the minds of those who have not previously thought upon the subject. Now, if such was the original diet of man, it is certain that the Divine Being must have provided him with such an organization, as was better adapted to the solution and assimilation of vegetable matter, in the form of fruits, roots, grain, &c., than any other alimentary matter: to suppose otherwise would be to admit a defect in the plans of Omniscience, which we invariably find 'ordered in all things and sure.' It devolves, therefore, upon those who maintain that man was *originally* frugivorous but not so *now*, to show that his organization has, since his original creation, undergone some change. This, of course, they cannot do; and I shall now endeavour to prove, that the organization of man is precisely of the nature we should expect a frugivorous creature to possess.

"Between the organs of digestion, of motion, and of sensation, there is so direct and intimate a relation, and so beautiful a harmony of parts that, from the appearance of a single bone or any other characteristic part, a skilful naturalist will often be able to describe, with considerable exactness, not only the form of the skeleton, but even the dietetic habits of an extinct species. A piercing eye, a keen scent, swiftness of foot or wing, strong talons, powerful muscles, sharp angular teeth, or a crooked beak, a simple stomach, a short alimentary canal, great cunning and a treacherous and cruel disposition, generally characterize the carnivorous animal; and the remark applies universally to mammalia, birds, reptiles, fishes, and insects. The herbivorous race is, for the most part,



distinguished by organs and qualities the reverse of all these ; and so consistent is nature in all her work, that we never find an animal with organs of a rapacious character in one part of its structure, and those of an opposite class in another part. For instance,—the claws of the tiger are never combined with the stomach and intestinal canal of the sheep or the camel. All the divisions of an animal's economy, are wisely adjusted to each other : perfection and unity of design mark every organ, and fit it for the function it has been destined to perform. Let us, therefore, wisely consider these workings of divine wisdom, and carefully note the lessons they are intended to teach us.

“ If the structure of any animal be of a character decidedly carnivorous, or decidedly herbivorous, there is little difficulty in determining its place in the scale of creation ; but ‘ if we find, on careful and accurate examination, that the organs under our inspection, are neither like those of carnivorous nor like those of herbivorous animals, we are to conclude that the animal whose they were, belonged to neither of these orders ; and if the animal belonged to an extinct or unknown species, the natural history of which is also wholly unknown, and cannot now be studied, all correct principles in comparative anatomy, most clearly and decidedly demand, that we should diligently explore the animal kingdom, and, if possible, find some type with which the organs under our examination correspond. But if no exact type of our specimen can be found, then we must ascertain in what order of animals alimentary organs are found most nearly resembling those of our specimen ; and when this is done we must conclude, that the animal to which our specimen belonged, came nearer to that order than to any other known order of animals, in its natural dietetic character ; and in all that our specimen varies from that order, and approaches to a resemblance of some other known order, we are to conclude, that the animal to which it belonged differed from the former, and approached to an agreement with the latter, in its natural dietetic character. But if we find an order, with the alimentary organs of which our specimen fully corresponds, then we are irresistibly led to the conclusion, that the animal to which it belonged was of the same dietetic character with that order ;—and, if, now, we can, by studying the natural history or observing the natural dietetic habits of that order, fully ascertain the natural dietetic character of the animals belonging to it, then we know the natural

dietetic character of the animal to which our specimen belonged ; just so far as the most rigorously correct principles and reasonings of comparative anatomy can teach us.

“*Teeth.*—The teeth of the Mammalia (*cattle*) are generally divided into four sorts:—1. Incisors, or Cutting Teeth. 2. Canines, Cuspids, or Eye-teeth. 3. Bicuspid, or small Cheek-teeth. 4. Molars, or large Cheek-teeth. In each human jaw there are sixteen teeth ; consisting of four incisors, two cuspids, four bicuspid, and six molars. These, in a perfectly primitive state, form an uninterrupted series ; they are all nearly equal in length, and closely approximated in each jaw,—a character by which man is distinguished from all other animals excepting the fossil genus *Anoplotherium*, which is allied to the *Tapir* tribe.

“The incisors in man are large, broad, and compressed, with a flat edge. In carnivorous (*flesh-eating*) animals there are six in each jaw : they are small and pointed,—bearing no resemblance to those of man ; standing, also, further apart, and being comparatively unimportant. In herbivorous animals they are broad, as in man ; but generally much stronger, with the cutting ends considerably thicker, but varying extremely, both in form and number.

“Linnaeus, one of the most celebrated naturalists that ever existed, speaking of fruit, says—‘This species of food is that which is most suitable to man : which is evinced by the series of quadrupeds ; analogy ; wild men ; apes ; the structure of the mouth, of the stomach and the hands.’

“M. Daubenton, the associate of Buffon, and the first writer who rendered the study of anatomy subservient to natural history, observes—‘It is, then, highly probable that man in a state of pure nature, living in a confined society, and in a genial climate,—where the earth required but little culture to produce its fruits,—did subsist upon these, without seeking to prey on animals.’

“Gassendi, in his celebrated letter to Van Helmont, says—‘I was therefore contending, that we do not appear to be adapted by nature to the use of flesh-diet, from the conformation of the teeth. Since all animals (I speak of terrestrial ones) which nature has formed to feed on flesh, have teeth, long, conical, sharp, uneven, and with intervals between them ; of which kind are lions, tigers, wolves, dogs, cats, &c. But those

which are created to subsist only on herbs and fruits, have their teeth short, broad, blunt, adjoining to one another, and distributed in even rows; of which sort are horses, horned cattle, sheep, goats, deer, and some others. And, farther, that men have received from nature teeth, which are unlike those of the first class, and resemble those of the second: it is therefore probable, since men are land-animals, that nature intended them to follow, in the selection of their food, not the carnivorous tribes, but those races of animals which are contented with the simple productions of the earth. Wherefore, I repeat, that from the primeval and spotless institution of our nature, the teeth were destined to the mastication, not of flesh, but of fruits.' As to what relates to flesh, it is indeed true that man may be sustained on meat; but how many things does man do which are contrary to his nature! Such is the perversion of manners now, by a general contagion, enamelled into him, that he seems to have become a new creature. Hence the doctrines of morality and philosophy are directed to no other object, than to recal mankind to the paths of nature, which they have abandoned.'

"Sir Everard Home says—'While mankind remained in a state of innocence, there is every ground to believe, that their only food was the produce of the vegetable kingdom.'

"Baron Cuvier, whose knowledge of comparative anatomy was most profound, and whose authority therefore is entitled to the greatest respect, thus writes, :—'Fruits, roots, and the succulent parts of vegetables, appear to be the natural food of man: his hands afford him a facility in gathering them; and his short and comparatively weak jaws, his short canine teeth not passing beyond the common line of the others, and the tuberculous teeth, would not permit him either to feed on herbage or devour flesh, unless those aliments were previously prepared by the culinary processes.'

"'The use of plants,' says Ray, the celebrated botanist, 'is all our life long of that universal importance and concern, that we can neither live nor subsist with any decency and convenience, or be said to live indeed at all without them. Whatsoever food is necessary to sustain us, whatsoever contributes to delight and refresh us, is supplied and brought forth out of that plentiful and abundant store. And, ah! how much more innocent, sweet, and healthful, is a table covered with these, than with all the reeking flesh of slaughtered and butchered animals.'

Certainly man by nature was never made to be a carnivorous animal, nor is he armed at all for prey or rapine, with jagged and pointed teeth, and crooked claws sharpened to rend and tear; but with gentle hands to gather fruits and vegetables, and with teeth to chew and eat them.'

"Professor Lawrence observes—'Physiologists have usually represented, that our species holds a middle rank in the masticatory and digestive apparatus, between carnivorous and herbivorous animals;—a statement which seems rather to have been deduced from what we have learned by experience on this subject, than to have resulted fairly from an actual comparison of man and animals.' After comparing the alimentary organs of man with those of other animals, he further says—'The teeth of man have not the slightest resemblance to those of the carnivorous animals, except that their enamel is confined to the external surface. He possesses, indeed, teeth called "canine;" but they do not exceed the level of the others, and are obviously unsuited to the purposes which the corresponding teeth execute in carnivorous animals.' After sundry observations on organization, he says—'Thus we find that, whether we consider the teeth and jaws, or the immediate instruments of digestion, the human structure closely resembles that of the Simiæ; all of which, in their natural state, are completely herbivorous.' (frugivorous?)

"Mr. Thomas Bell, in his 'Anatomy, Physiology, and Diseases of the Teeth,' observes—'The opinion which I venture to give, has not been hastily formed, nor without what appeared to me sufficient grounds. It is, I think, not going too far to say, that every fact connected with the human organization goes to prove, that man was originally formed a frugivorous animal; and therefore tropical, or nearly so, with regard to his geographical position. This opinion is principally derived from the formation of his teeth, and digestive organs; as well as from the character of his skin, and the general structure of his limbs.'

Seeing, then, that comparative anatomy is so clear in its indications of the proper food of man, and that men so well qualified for giving an opinion upon the matter have expressed themselves so decidedly, it certainly is surprising to find so many authors on physiology and dietetics, ridiculing the idea of a vegetable diet; and briefly stating, without an attempt at proof, that the teeth, stomach, and other parts of man's structure, declare him to be omnivorous, or formed for a



mixed diet.—(*Mr. Smith goes on to describe the structure of the alimentary organs.*)

“If, then, we have proved that there is a direct relation between the alimentary organs of man and vegetable diet, and none between those organs and the flesh of animals, it is evident that the highest development of his coporeal and mental powers, will be effected by employing those powers in pursuance of those relations; for no artificial preparation of animal flesh, can render it a fit substitute for what nature has appointed. It must be remembered, that the question is not—‘What substances can man, by artificial preparation, succeed in rendering digestible and nutritious?’—for we have seen that all animals have considerable latitude granted them in this respect, even without preparation: but the real inquiry is—‘What substances appear best adapted by nature for the nutrition of man, and for most effectually promoting all the vital interests of his system?’ This question has already been answered; and the objection we have been considering depends upon mere assertion: but it will receive further illustration as we proceed.

“*Flesh-eating general in various nations.*—It has been said, that the general adoption of an animal or mixed diet by mankind, in various parts of the earth, is a proof that man is instinctively omnivorous. But were the habit of eating flesh-meat universal, which, as will hereafter be shown, is far from being the case, this would not demonstrate that it is the natural diet of man. Many habits might be pointed out as general, in almost all portions of the earth, which are nevertheless perfectly artificial, and opposed to the health and happiness of man.

“‘Tobacco,’ observes Sylvester Graham, ‘is quite as extensively used by human beings, as flesh-meat is; and those who are accustomed to the use of it, would a thousand times sooner relinquish their flesh-meat for ever, than abandon their tobacco. Yet no one, I presume, will contend that this proves man to have a natural instinctive desire or appetite for tobacco; and that tobacco was made for the use to which man has appropriated it. We know that man has, naturally, a deep and utter loathing of tobacco; and that he is obliged to overcome the most powerful antipathy of his nature, in adapting himself to the use of it: but if every human being were trained to the use of tobacco so early in life, and by such delicate and imperceptible degrees that he could not appreciate or remember the first effects of it upon the system, it would

almost be impossible for us to believe than man has not a natural, instinctive desire and necessity for it. It is precisely so in regard to flesh-eating. All who have perfectly sanctified themselves from animal food, and restored their instinctive faculties of smell and taste to something of their native purity, well know that flesh-meat is most loathsome to them.

“The truth is, all animals (including man) are constituted upon certain physiological principles, out of which grow certain physiological wants; and upon these wants are established certain faculties of instinct, with determinate relation to the nature and qualities of the appropriate supplies. These faculties, while preserved in their integrity, are a law of truth to all; but they are capable of being depraved, and rendered totally blind guides, which lead to the most pernicious errors.

“The lower animals have neither the mental nor the voluntary powers to deprave their natural instincts, to any considerable extent; and therefore they remain, from birth to death, and from generation to generation, subject to the law of instinct, and with little deviation from their truly natural dietetic habits. But man, possessing the mental and voluntary power to deprave his natural instincts, has exercised that power so freely and extensively, that he no longer seems to be able to discriminate between his truly natural, and his depraved instincts and appetites; nor to distinguish his artificial from his natural wants.’

“‘Civilization and luxury,’ observes Thackeray, ‘have depraved the stomach and perverted the taste. Habits of life, purely artificial, are successively formed; and, by daily repetition, acquire a power which stifles the calls of instinct. The vitiated stomach has a craving as strong for its noxious stimulus, as the healthy stomach for requisite sustenance.’

“As to the statement, that the different portions of the human race appear to have enjoyed about an equal amount of health, vigour, and longevity, whether their food has been purely vegetable, or purely animal, or a mixture of the two,—let it be understood that, so far as we are informed, no considerable portion of the human family ever intelligently adopted any particular mode of living, upon clear and well-ascertained physiological principles; and constantly and perseveringly, from generation to generation, adhered to a course of diet and general regimen, conformable to all the laws of life; but, on the contrary,

nearly every thing in the nature, condition, and circumstances of man, from the first transgression to the present hour, has served to fix his attention continually on present enjoyment; with no further regard to future consequences than experience has taught him to be necessary, in order to avoid sudden destruction, or intolerable distress; and hence, as we have seen, the grand experiment of the whole human family seems ever to have been to ascertain how far they can go in indulgence;—how near they can approach the brink of death; and yet not die so suddenly and violently, as to be compelled to know that they have destroyed themselves. Whether, therefore, men have subsisted wholly on vegetable, or on animal food, or on a diet consisting of both, they have done so without any regard to correct physiological principles,—either in relation to quality, quantity, or condition of their food,—or in relation to other physiological wants and habits of the body; which are nearly as important to the general welfare of the system, as the quality and condition of the food. If their climate and circumstances have been less favourable than others to health, vigour, and longevity, they have learned from experience, how far, as a general rule, they must restrain their indulgencies; and in what way they must regulate their habits and appetites, so as to secure life long enough for one generation to become the progenitors and nurturing protectors of another generation. And if their climate and circumstances have been more favourable than others to health, vigour, and longevity, they have also learned from experience how far they may go in indulgence, and still keep within the bounds necessary for the perpetuation of the race. The fact, then, that a large portion of the human family actually have, for many centuries, and probably ever since the flood, subsisted to a greater or less extent on animal food, and apparently done as well as those who have subsisted wholly upon vegetable diet, does not, in any degree, invalidate the evidence of Comparative Anatomy;—that man is, naturally and purely, a frugivorous (herbs, fruit, and grain) animal.

“*Vegetables contain all the Elements and Qualities necessary for the Complete Nutrition of Man.*—Having seen that history and science bear ample testimony to the truth, that vegetables *were* the original, and *are* (now as well as in former ages) the natural food of man, the inference that they are also his best food, seems unavoidable; but as evidence of a totally different nature from that already produced, can be brought to prove

the latter, independently of the two former propositions, the whole three may be considered established, as clearly and firmly as questions of such a nature admit. First, then, we must inquire, what important purposes food is designed to answer in the human economy; secondly, whether vegetables possess the elements and qualities necessary for answering those purposes; thirdly, we must ascertain whether they are easy of digestion; and, lastly, whether they are superior to animal food or a mixed diet, for sustaining all the vital processes;—for producing the ‘mens sana in corpore sano,’ in the greatest perfection, and for the longest period. [Mr. Smith gives in 25 pages a very clear account of the constitution of vegetable and farinaceous food.]

“The experiments of Dr. Beaumont and others prove, that when fruits, roots, and farinaceous substances, have been well masticated and mixed with saliva, they are easily digested in the healthy human stomach, and answer all the purposes of complete nutrition.

“A short statement of facts from Dr. Beaumont’s Tables, will confirm these remarks. He informs us, that the following articles were converted into chyme, or digested in the times mentioned.

|   | H. | M. |
|---|----|----|
| Rice, boiled soft . . . . .   | 1  | 0  |
| Apples, sweet and ripe . . . . .  | 1  | 30 |
| Sago, boiled . . . . .  | 1  | 45 |
| Tapioca, Barley, stale Bread, Cabbage, with Vinegar,<br>raw, boiled Milk and bread and Milk, cold . . . . . | 2  | 0  |
| Potatoes, roasted; and Parsneps, boiled . . . . .   | 2  | 30 |
| Baked Custard . . . . .   | 2  | 45 |
| Apple Dumpling . . . . .  | 3  | 0  |
| Bread-corn, baked; and Carrots, boiled . . . . .  | 3  | 15 |
| Potatoes and Turnips, boiled; Butter and Cheese . . . . .   | 3  | 30 |
| Tripe and Pig’s Feet . . . . .  | 1  | 0  |
| Venison, broiled . . . . .  | 1  | 35 |
| Codfish, boiled; and Eggs, raw . . . . .  | 2  | 0  |
| Turkey, Goose, and Lamb . . . . .   | 2  | 30 |
| Eggs, soft boiled; Beef and Mutton, roast or boiled; and<br>Oysters, raw . . . . .                          | 3  | 0  |
| Boiled Pork; stewed Oysters, Eggs, hard-boiled, or fried . . . . .  | 3  | 30 |
| Domestic Fowls and Ducks, roasted . . . . .   | 4  | 0  |
| Wild Fowls; Pork, salted and boiled; Suet . . . . .   | 4  | 30 |
| Veal, roasted; Pork, and salted Beef . . . . .  | 5  | 30 |



Our second question is, I think, now sufficiently answered ;—it being demonstrated, upon the strictest chemical principles, that vegetables do possess the elements and qualities necessary for renewing the decomposed tissues of the body.

“ ‘ Bulk,’ says Dr. Beaumont, ‘ is nearly as necessary to the articles of diet, as the nutrient principle. They should be so managed, that one will be in proportion to the other. Too highly nutritive diet, is probably as fatal to the prolongation of life and health, as that which contains an insufficient quantity of nourishment. It is a matter of common remark among old whale-men, that, during their long voyages, the coarser their bread the better their health. ‘ I have followed the seas for 35 years,’ said an intelligent sea captain to Mr. Graham, ‘ and have been in almost every part of the globe; and have always found that the coarsest pilot-bread, which contained a considerable proportion of bran, is decidedly the healthiest for my men.’ ‘ I am convinced from my own experience,’ says another captain, ‘ that bread made of the unbolted wheat meal, is far more wholesome than that made from the best superfine flour ;—the latter always tending to produce constipation.’ Captain Benjamin Dexter, in the ship *Isis*, belonging to Providence, R. J., arrived from China in December, 1804. He had been about 190 days on the passage. The sea-bread, which constituted the principle article of food for his men, was made of the best superfine flour. He had not been long at sea, before his men began to complain of languor, loss of appetite, and debility: these difficulties continued to increase during the whole voyage; and several of the hands died on the passage of debility and inanition. The ship was obliged to come to anchor about 30 miles below Providence; and such was the debility of the men on board, that they were not able to get the ship under way again; and the owners were under the necessity of sending men down from Providence, to work her up. When she arrived, the owners asked Captain Dexter what was the cause of the sickness of his men. He replied—‘ The bread was too good.’ [*For the adaptation of bread to supply all the constituents of the body, see page 31, of this book.*]

“ Pythagoras, one of the most celebrated philosophers of antiquity, is the first we read of as defending a vegetable diet. He not only totally refrained from animal food himself, but strictly prohibited the use of it by his disciples; so that those who abstain from it at the present time

are frequently called Pythagoreans. Pythagoras flourished about 500 years before the Christian era. He was a man of immense learning, and extraordinary powers of intellect.

"Zeno the Stoic, Diogenes the Cynic, Plato, Plutarch, Plautus, Proclus, Empedocles, Socion, Quintus Sextus, Apollonius Tyanæus, Porphyry, and numerous others among the ancients, abstained from animal food; and more recently, Haller, Ritson (celebrated for his numerous works and splendid talents), Dr. Cheyne, Dr. Lambe, Mr. Newton (who wrote a work entitled, 'Return to Nature'), Shelly, Dr. Hufeland, Sir Richard Phillips, Professor R. D. Mussey, of Hanover, U. S., Dr. James of Wisconsin, Dr. Whitlaw, Dr. W. A. Allcott of Boston, U. S., and many others, have both advocated and personally tried, for many years, a strictly and exclusively vegetable diet.

"When Boadicea, queen of the Ancient Britons, was about to engage the Romans in a pitched battle, in the days of Roman degeneracy (A. D. 61), she encouraged her army by an eloquent speech, in which she says, 'The great advantage we have over them is, that they cannot (like us) bear hunger, thirst, heat, or cold.—They must have fine bread, wine, and warm houses.—To us, every herb and root are food; every juice is our oil, and every stream of water our wine.' 'In those times,' observes Lord Kaimes, 'our fathers were robust both in mind and body; and could bear, without much pain, what would totally overwhelm us.'

"A considerable proportion of the labourers in various parts of England and Wales, even at the present day, eat but little animal food; and about seventy or eighty years ago, the principal part of the labour in this country was performed by those who seldom or ever tasted flesh-meat.

"The hardy Scotch, also, are almost exclusively confined in their diet to the productions of the field and garden. 'So late as 1763,' says Mr. McCulloch, 'the slaughter of bullocks for the supply of the public markets, was a thing wholly unknown even in Glasgow; though the city had then a population of nearly 30,000!'

"The Lazzaroni of Naples are a tall, stout, well-formed, robust, and active class of people; and yet subsist chiefly on coarse bread and potatoes; and their drink of luxury is a glass of iced water, slightly acidulated.

"In France, a vegetable diet prevails to a very great extent. M. Dupin informs us, that two-thirds of the French people, to this day, are wholly deprived of animal food; and live on chesnuts, or maize, or potatoes. The peasantry of Norway, Sweden, Russia, Denmark, Poland, Germany, Turkey, Greece, Switzerland, Spain, Portugal, and of almost every other country in Europe, subsist principally, and most of them entirely, on vegetable food.

"It has been observed, that 'from two thirds to three-fourths of the whole human family, from the creation of the species to the present moment, have subsisted entirely, or nearly so, on vegetable food; and always, when their alimentary supplies of this kind have been abundant and of a good quality, and their habits have been in other respects correct, they have been well nourished, and well sustained in all the physiological interests of their nature.'

"Dr. Adam Smith, in his 'Wealth of Nations,' says:—'It may indeed be doubted, whether butcher's-meat is any where a necessary of life. Grain, and other vegetables, with the help of milk, cheese, and butter, or oil (where butter is not to be had), it is known from experience can, without any butcher's-meat, afford the most plentiful, the most wholesome, the most nourishing, and the most invigorating diet.'

"Mr. W. Fairbairn, of Manchester, in the 'Report on the Sanitary Condition of the Labouring Population of Great Britain,' says:—'I observed, on a late journey to Constantinople, that the boat-men or rowers of the caiques, who are perhaps the first rowers in the world, drink nothing but water; and they drink that profusely during the hot months of the summer. The boat-men and water-carriers of Constantinople are decidedly, in my opinion, the finest men in Europe,—as regards their physical development; and they are all water-drinkers: they may take a little sherbet; but, in other respects, are what we should call in this country "Teetotallers." Their diet is chiefly bread; now and then a cucumber, with cherries, figs, dates, mulberries, or other fruits which are abundant there; now and then a little fish: occasionally, I believe, they eat the flesh of goats; but I never saw them eating any other than the diet I have described. They eat about the same amount as European workmen; but, if any thing, are more moderate as respects quantity.'

"Sir Francis Head informs us, that immense loads are carried by the

South American miners, though fed entirely on grain and pulse. 'It is usual for the copper-miners of Central Chili to carry loads of ore of 200 lbs. weight up eighty perpendicular yards twelve times a day. When they reach the mouth of the pit they are in a state of apparent fearful exhaustion, covered with perspiration, their chests heaving, yet after briefly resting they descend again. Their diet is entirely vegetable: breakfast consists of sixteen figs and two small loaves of bread; dinner, boiled beans; supper, roasted wheat grain. They scarcely ever taste meat; yet on this simple diet they perform a labour that would almost kill many men.' 'The diet of the Affghan consists of bread, curdled milk, and water. He lives in a climate which often produces in one day extreme heat and cold; he will undergo as much fatigue, and exert as much strength, as the porters of London, who are fed on flesh and ale; neither is he subject to their acute and obstinate disorders.'

"An officer of a frigate who had been at the Sandwich Islands has declared, that our sailors stood no chance in boxing with the natives, who fight precisely in the English manner. A quarter-master, a very stout man, and a skilful boxer, indignant at seeing his companions knocked about with so little ceremony, determined to try a round or two with one of the stoutest of the natives, although strongly dissuaded from the attempt by his officers. The blood of the native islander being warmed by the opposition of a few minutes, he broke through all the guards of his antagonist, seized him by the thigh and shoulder, threw him up, and held him with extended arms over his head for a minute, in token of triumph, and then dashed him on the deck with such violence as to fracture his skull. The gentleman added, that he never saw men apparently possessed of such muscular strength. Our stoutest sailors appeared mere shrimps compared with them. Their mode of life, constantly in vigorous action in the open air, and undebilitated by the use of stimulating food or drink, may be considered as a perpetual state of training.

"Examples might be multiplied, from all parts of the world, of people living entirely upon vegetable food, and enjoying perfect health and bodily vigour; but perhaps none are more striking than those we have in close proximity to us. 'The chairmen, porters, and coalheavers, the strongest men in the British dominions, are said to be, the greater



part of them, from the lowest rank of people in Ireland, which are generally fed with the potatoe. No food can afford a more decisive proof of its nourishing quality, or of its being peculiarly suitable to the health of the human constitution.' This remark has been amply confirmed by the recent experiments of Professor Forbes, on the weight, height, and strength of above eight hundred individuals;—his tables clearly showing, that the Irish are more developed than the Scotch at a given age, and the English less.

"Mr. Brindley, a celebrated canal engineer in this country, informs us, that in the various works in which he has been engaged,—where the workmen, being paid by the piece, each exerted himself to earn as much as possible,—men from the north of Lancashire and Yorkshire, who adhered to their customary diet of oat-cake and hasty-pudding, with water for their drink, sustained more labour and made greater wages, than those who lived on bread, cheese, bacon, and beer,—the general diet of labourers in the South.

"Diseases of the liver are much more common where a flesh-diet abounds. Dr. Copland informs us that 'eating largely or frequently, especially of animal, rich, and highly seasoned food,—stimulating the appetite by a variety of incongruous dishes and sauces, and spices and wines, particularly in warm countries and seasons, are most influential causes of these disorders.' We have known various persons who have been delivered from painful and obstinate disorders by giving up the use of animal food entirely; and others in whom disorders of the nervous system and the chest had been very much relieved by the same procedure.

"Dr. Caleb Bannister, of Phelps (N. Y.), whose ancestors, it appears, had all died of hereditary consumption, states as follows:—'At the age of twenty, I began to be afflicted with pain in different parts of the thorax, and other premonitory symptoms of phthisis pulmonalis. Having a severe attack of ague and fever, all my consumptive symptoms became greatly aggravated; the pain was shifting, sometimes between the shoulders, sometimes in the side or breast, &c.' After enumerating various other symptoms (such as irritable pulse, &c.), and stating that his life was despaired of, he says:—'I was induced to try a milk-diet, and succeeded in regaining my health; so that, for twenty-four years, I have been entirely free from any symptom of phthisis.'

“ ‘It will not be disputed,’ says Dr. Lambe, ‘that, for consumptive symptoms, a vegetable diet, or at least a vegetable and milk diet, is the most proper.’ Dr. Buchan again observes:— ‘When there is a tendency to consumption in the young, it should be counteracted by strictly adhering to a diet of the farinacea and ripe fruits. Animal food and fermented liquors ought to be rigidly prohibited; even milk often proves too nutritious.’

“ Scrofula, cancer, scurvy, epilepsy, dysentery, inflammation, ulcers, &c., may be included among the diseases which are greatly relieved, if not cured, by vegetable diet; as the ensuing facts attest. Dr. N. J. Knight, of Truro, records the following case:— ‘Mrs. A., infected with scrofula of the left breast, and in a state of ulceration, applied to me two years ago. The ulcer was then the size of a half dollar, and discharged a considerable quantity of imperfect pus. The axillary glands were much enlarged; and, doubting the practicability of operating with the knife in such cases, I told her the danger of her disease; and ordered her to subsist upon bread and milk and some fruit, drink water, and keep the body at as uniform temperature as possible. I ordered the sore to be kept clean, by ablutions of tepid water. In less than three months the ulcer was healed, and her general health much improved. The axillary glands are still enlarged, though less so than formerly. She still lives simply, and enjoys good health; but she tells me if she tastes flesh-meat, it produces a twinging in the breast.

“ A physician, in answer to Dr. North, states that he had been subject to severe attacks of epilepsy; but, having maintained a total abstinence from flesh, fish, and fowl, for two years and a half, he had been entirely free from any attack.

“ Dr. Cheyne relates a remarkable cure of epilepsy, in the case of Dr. Taylor; who was, for a long time, dreadfully afflicted with epileptic fits. He tried the effects of medicine, and consulted all the most eminent of his brethren of the medical profession, in and about London; but obtained no relief. At last, he was obliged to follow the advice of Dr. Sydenham, whose works he had studied. He first discontinued the use of all fermented and distilled liquors; then, finding his fits become less frequent and less violent, he gave up all animal food, and confined himself entirely to cow's milk. In the course of a year or two he was perfectly cured: and, for seventeen years, enjoyed as good health as human nature is capable of.

“ But the most remarkable cure of this kind, is recorded in ‘The Lancet’ for May 14, 1842, by Mr. S. Rowbotham, Surgeon, of Stockport. The son of a Mr. Fielding, of that town, about three years old, had been ill eighteen months. He was covered from head to foot with ulcers: his eyes, nose, ears, mouth, and, in fact, his whole head and face, were involved in one complete mass of fetid running sores and ulcers; and the lower part of his body was equally bad;—so that his

little thighs seemed nearly separating from his body. For more than twelve months, he had been quite blind; and had never been able to sit down, even on a pillow; but stood upon his foot, and leaned with his elbow upon the nurse;—except at times, when he was able to kneel on a pillow: he had scarcely been able to lie in bed for the same period. Eight of the most eminent medical men had given him up as incurable; and some of them declared, that no known mortal power could even *improve* his condition, much less effect a cure. ‘From certain views which I held on the origin of disease,’ says Mr. Rowbotham, ‘I was induced to recommend a diet consisting almost entirely of ripe fruits and honey, or sugar and treacle. The child commenced this diet on the 13th of September, 1841: he had stewed fruits, mixed with sugar or honey, to all his meals; and was allowed frequently to eat grapes, cherries, plums, apples, pears, and such other fruits as could be obtained. On the 16th, the sores on his back were beginning to disappear; on the 23rd, he was very sensibly improved; on the 30th, one-half of his face was clear; the lower parts of his body were much better; and he could sit in a chair, and lie comfortably in bed. He continued daily to improve, till at last his eyes opened; but they were at first very weak; and he could scarcely see any thing: his sight, however, gradually improved. On the first of January, 1842, not a single ulcer remained on his body: the skin became remarkably clear and fair; and the features—which, for twelve months, had been in such a state that it was impossible to do more than guess at the position of his nose and eyes—were restored to their wonted appearance.’

“Adam Smith, in his ‘Wealth of Nations,’ informs us, that the most beautiful women in the British dominions, are said to be (the greater part of them) from the lower rank of people in Ireland, who are generally fed with potatoes. The peasantry of Lancashire and Cheshire, also, who live principally on potatoes and butter-milk, are celebrated as the handsomest race in England.

“Mr. Shillitoe, of Tottenham,—a member of the Society of Friends,—when about forty-five years of age, had suffered from ill health during a many years; and was restored by adopting a vegetable diet, and water for drink. He lived till nearly ninety years of age; and at eighty could walk, with ease, from Tottenham to London (six miles) and back again. He gives the following account of himself:—‘It is now thirty years since I ate fish, flesh, or fowl; or took fermented liquor of any kind whatever. I find, from continued experience, that abstinence is the best medicine. I do not meddle with fermented liquors of any kind, even as medicine. I find I am capable of doing better without them.’”

**WET BODY BANDAGES** should not be worn constantly. I have had patients who, on leaving the Establishment, have worn the bandages without advice for months to their injury. I use the body bandages for a few days occasionally, when stomach or bowels are out

of order, or if fatigued. The wet chest compress should be replaced by dry flannel, when the chest or cough is relieved.

**CASE OF LIVER DISEASE, JAUNDICE, AND LOWNESS OF SPIRITS.**—The following letter I have just received from a late patient. He came to my Establishment in a most miserable state of body and mind, and quite hopeless of cure, and I had much doubt if he was not gone too far to recover. He should have stayed to work the crisis off at my Establishment, it would have been thrown off in half the time. The writer of the letter is about forty-six years of age, and had taken a great quantity of physic: hence the great discharge from crisis. The renewed vitality of the digestive organs making good blood, will throw out all impurities from the frame, and he will then have no more crisis.

S . . . house S . . . , March 9th, 1858.

To Mr. SMEDLEY.—Dear Sir, it is some time since I wrote to you, say ten weeks or so, but I have not forgot Matlock, and the benefit I derived there. I have had my memory freshly awakened on receiving a bundle of prospectusses from you by post last week. When I last wrote I think I intimated my sufferings on the skin, and how I had been relieved, and my flesh had cleaned and freshened. Such was the case; but in course of a week a second eruption began to appear, and progressed more extensively than the first. My thighs have been a mass of sores, or in one sore, extending below the calf of the leg, accompanied with intolerable itching, and yielding an abominable fetid fluid with a sulphurous smell. I have been compelled to wear cotton drawers underneath the woollen ones I got from you, as it was impossible to keep my hands still, whether alone or in company. This has continued alternating until now, and I have deferred writing to feel and see a change. I think at present for a few days past I am somewhat relieved. My stomach has much improved, and my liver performs its functions a great deal better. What I am pleased to communicate is, that my brain is relieved, my vision is clear and strong, and the hypochondriac fears are fled. The bodily stamina instead of being ten stones, as when I was at Matlock, is near eleven. The power of resisting cold much greater, and yet a much greater tendency to perspire. Altogether I am better than for years. I continue to live on brown bread and butter, with cocoa, potatoes, puddings, and apples; no tea, nor flesh, nor condiments, seasonings, &c., further than sugar and salt. I frequently work in my farm, but sparingly at present. With our best wishes to yourself and Mrs. Smedley, I remain, Dear Sir, yours faithfully, J . . . W . . .

**CONSTIPATION OF THE BOWELS.**—This often formidable ailment we have never failed to overcome by simple water treatment, and without the assistance of any aperient medicine whatever.

Diet of course is of the first importance to relief, and it is best to abstain entirely from animal food. If the case is of long standing or obstinate, take four or five tumblers of water per day, a small quantity at once, beginning on rising. The wet body bandage should be worn night and day for some weeks, and if it does not feel warm have a flannel



wrapper over it: re wet it three times a day. On rising have a cold dripping sheet or shallow; forenoon wet pack every other day; on alternate forenoons have sitz 70 degrees ten minutes, and four cold; every evening at bed-time have hot sitz sixteen minutes, and a cold sheet or cold sponge after it. Avoid all stimulants, coffee, pepper, mustard, pastry, and flesh-meat. See Page 207.

**AGUE.**—The mild water treatment is eminently successful in curing and entirely eradicating this formidable complaint. The hot and cold dripping sheet on rising, the fomenting pack, and ordinary wet pack, varied by a vapour bath, with cold dripping sheet or sponge down after it, and the use of the wet body bandage day and night, with a dry flannel wrapper over it if it does not keep a good warmth. Hot soaping, and sponge over cold at bed-time, once or twice a week. The hot sitz fifteen minutes, followed by a sponge over in nearly cold, feet in hot mustard and water, every night at bed-time, and the body bandage would in most cases be sufficient, with care in diet, and abstinence from all stimulants and flesh-meat. The fomenting pack one hour or one hour and a quarter will arrest an attack at once.

**BRAIN FEVER.**—We have had several severe cases under treatment, and have been successful with them. I can only give some general directions in these cases, as the attack comes on from such various causes, and requires treating accordingly; but the great point in all cases of course is, to lower the excitement in the brain by derivative baths, relieving the overcharged blood vessels in the head, and the nervous excitement.

In the first place cut off the hair from the head, (females may leave the long hair in front) have head bath 70 deg. five to ten minutes, two or three times per day, and sponge the forehead while in (see page 54). Mustard plaisters to the soles of the feet day and night, as long as the patient can bear them, the legs and feet wet packed, as at page 46-56, and when the feet are too tender put on cotton socks wrung out of tepid water, and lambs' wool over, have hot bottle also to the feet. Mustard plaister over the right side, in the region of the liver, till red. Fomentation back and front, as at page 46, twenty minutes at a time. Night and day spongio spinal compress. Wet body bandage, if not hot put flannel over, as it is of great importance, keeping heat in the stomach and bowels, &c. The arms should be bandaged with wet strips of calico, macintosh, and flannel. Trunk pack as at page 129, washing body over with hot water and yellow soap morning and evening, and sponge over tepid standing on hot pad.

Diet. Cooling drink, see receipt at end of the work; barley water. No flesh-meat, coffee, &c. If there is much exhaustion a tea-spoonful of brandy in creed water sago. Soon as the patient's appetite returns cold mutton chopped fine, with bread crumbs; sip water all the time, and as much as the patient desires.

**FISTULA.**—(*See cuts of rectum.*) Dr. Hooper says: "Fistula in Ano. A sinus by the side of the rectum. From the laxity of the cellular membrane in the vicinity of the rectum, abscesses which form here easily become diffused, and the matter burrows by the side of the gut, often to a very formidable extent, and hence the necessity of early attention and great care in the treatment of abscesses so situated. Those fistulæ in which the matter has made its escape by one or more openings through the skin only, are called *blind external fistulæ*; those in which the matter has been discharged through an opening into the rectum, without any aperture in the skin, are called *blind internal fistulæ*; and those which open both into the gut and also externally through the skin, are called *complete fistulæ*. The cure is by a surgical operation, which consists in laying the sinus freely open, and applying proper dressings to promote its incision." Fistulas come on from sedentary habits and constipation. The habitual use of the sitz bath prevents both fistulas and piles. We have had a case of blind external fistula, which was cured by general treatment and the frequent use of sitz baths at 70 deg., fifteen minutes at a time, and one minute cold. But complete fistulas, I believe, can only be cured by a surgical operation. Hydropathic treatment is highly beneficial before an operation, in preparing the body for it, and afterwards in strengthening the parts and general health.

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**ALL PRIZE CATTLE DISEASED.**—*From the Vegetarian Messenger, price 2d.: Pitman, London.* "Once again we have a striking communication made to the public on the subject of the disease originated in the process of fattening animals. Scientific and other observant men have frequently thrown out that the animal is 'fattened' only at the expense of its health, and that as there are no fat animals in a state of nature, so the processes resorted to to make up the prize-fed monstrosities of Smithfield are immensely against the interests of the consumer of the flesh of animals.

"A question of much interest to the breeders of cattle, judges at exhibitions of stock, and the public, has been raised by Mr. GANT, a London surgeon. It appears that he was struck with the appearance of some of the prize animals at the late Smithfield Cattle Show, several of which also took honours at Birmingham, followed them to the slaughter-house, and as the result of dissection and microscopical observations, discovered that the hearts and proper muscular structure, the nutritious parts, were degenerated into unhealthy fat and oil globules, and that the lungs were the seat of extensively deposited tubercular disease, of a similar structure to that form of deposit usually found in scrofulous and phthisical subjects. This discovery, although not made for the first time, puts the matter in a light so serious as to command attention. It would seem also to point to the necessity for

a change in the standard of what judges generally consider excellence.'

"We beg to call attention to the more complete explication of the above, as found in our present number. WHITLAW and others long since declared similar facts; but now, with the stamp of greater authority, we may reasonably hope that Mr. GANT's researches will be made valuable to the public.

#### THE ARCTIC ARGUMENT AGAINST VEGETARIANISM.—

"It is often said, in substance, 'Vegetarianism may be very well for a mau living in India, Spain, or even Britain, but it would never do for the dweller in the Arctic regions. A man must there eat flesh, and fat with the flesh, or he would certainly starve. I am sure you will admit your arguments for a Vegetarian diet break down whenever they cross the Arctic circle. Your candour hitherto makes me sure of that.'

"At the risk of being thought uncandid, we must decline to make the admission. Many persons will follow our arguments, and concur in the statements that man's teeth were not made to eat flesh, nor his stomach to digest it, and that his feelings in an undepraved state revolt from the infliction of pain or death upon any of God's creatures. Now, this granted, man is a Vegetarian. If then he is placed within the Arctic zone, where neither fruit nor grain are cultivated or will grow, is it not evident that he is in circumstances violently at variance with his created nature? Having thus far opposed us, some persons turn round and say, 'Now, live naturally, if you can.' They might with as much show of reason taunt a sick man with his inability to eat the same dinner that he did when in health; or turn a monkey, formed to live on trees, into a desolate plain, and wonder what had become of its lively agility; or place a man in a stinking hovel in St. Giles's, and express surprise that he should crave for gin and other stimulants. We can only expect men and animals to be true to their nature when they live in circumstances in accordance with that nature.

"That normal man was never intended to live in the polar regions, is proved by the common sense which prevents his colonization of their howling wastes. It is testified in the frozen blood, the death, and the mutilation of many a brave Arctic explorer. Time in those regions is spent in a continual and hazardous struggle for mere existence, leaving little or no margin for the rightful uses and pleasures of life. Truly, man has no reason or call to live in those awful wastes. And existence therein must result in as many violations of the laws of his nature as would life under the hot sun in the burning sands of Sahara. But it will be said, 'You forget the existence of the Esquimaux and the Laplanders.' No, we do not; and we think reference to them only confirms our argument. Their life, judged from a truly civilized point of view, is a most unnatural and nasty one. Wrapped in cumbrous furs, and unable alike from want of water and intolerable cold to keep the body in that state of cleanliness which comfort and health demand—

unable, from ignorance and climate together, to raise the grain and fruit which are the proper food of man, and therefore obliged to submit to the accidents of chance supplies, he starves at one time, and guzzles enormous quantities of blubber to sustain the heat and meet the wants of the body at another. This, and the fact that from the severe cold they are compelled to huddle in close and unventilated huts, makes their life, in the very nature of things, disgusting, and to a properly cultivated sense, inhuman. The Esquimaux may like it, and think any other far inferior, but we can only say we know better. The most unnatural and disgusting conditions become first tolerable, and then agreeable by custom, but they cannot for that cease to be unhappy departures from high principle and normal habits, and in themselves wholly abominable. Such a result is only a picture of poor human nature turned from its noble possibilities and its birthright with angels, and degraded in conformity and liking to the basest surrounding circumstances.

"The Icelanders are beyond doubt the best specimens of men living in, or on the borders of, unnatural climatic conditions. Their island, about one-third larger than Ireland, only sustains some 60,000 inhabitants, and those on some favoured tracts along the sea margin. A fine race of men, their intelligence, enterprise, and influence are sadly narrowed by the position of their country. In a milder clime they might have been a great nation, another England or New England, a strength and blessing to the world. Yet we see what their present unnatural position and consequent diet involves, in the results to health, that blessing the basis and receptacle of all others. The following account of their food and its results is given by LORD DUFFERIN:—

"The ordinary food of a well-to-do Icelandic family consists of dried fish, butter, sour whey kept till fermentation takes place, curds, and skier—a very peculiar cheese, unlike any I ever tasted, a little mutton, and rye bread. As might be expected, this meagre fare is not very conducive to health; scurvy, leprosy, elephantiasis, and all cutaneous disorders, are very common, while the practice of mothers to leave off nursing their children at the end of three days, feeding them with cows' milk instead, results in a frightful mortality among the babies.\*

"But men may live, and do live in high latitudes, and climates severe enough to test human endurance, on food entirely derived from the vegetable kingdom. The Russians are practical Vegetarians. The hosts of workmen employed on the great public works of the empire, subsist in summer on cucumbers and rye bread; and in winter the cucumbers are salted and eked out with chestnuts. The prowess of the Russian soldier England and France have had melancholy occasion to test, and the *Times* correspondent in the Crimea was amazed to find that desperate wounds, which would have been the death of a flesh-eating

\* LORD DUFFERIN's Letters from High Latitudes, page 143.



Englishman or Frenchman, *did not* kill the Russian, whose food was coarse black bread, with oil and salt. And the case is the same with the Russian peasantry, from whence workman and soldier are drawn. Their general food is coarse black bread and garlick. A finer people physically, all unite to say there is not. In a climate severely cold they enjoy health and vigour, and as one of the fairest tests of national well-being they rapidly increase in numbers. Spite of national jealousy, Russia is on the highway to greatness, and the future will, I have no doubt, find it one of the most useful and influential powers among the kingdoms of the earth; and while we cannot but profit by Russian prosperity and enlightenment, there is surely room enough in this wide world for the development of all without either trenching on the domains of the other.

"The Norwegian winter, as all know, is a severe one; but the Norwegians, like the Russians, are practical Vegetarians. They do eat flesh when they can get it, but that is but rarely, and is then eaten as a luxury, much as plum-pudding is by poor people in England. Yet the Norwegians, on their oatmeal and rye-meal, are robust and healthy, tall and good-looking, and in no European nation are there more instances of extreme longevity.

"One fact, if reliable, is as good as twenty in proving our point, and facts might be adduced to tedium to show that the heat of the human body can be sustained in severe cold on the products of the vegetable kingdom, especially cereals. In Siberia no exiles in that wintry region endure the cold better than those who have been accustomed to a simple vegetable diet, and the Hudson's Bay Company have discovered that 2½ lbs. of maize meal per day sustain the vital warmth and energy of their servants quite as well as the 8 lbs. of fat flesh-meat formerly used, whilst the men themselves prefer it.

"Facts like these dispose of the common argument constantly brought against Vegetarians, about their system being impossible in cold climates. But supposing it were as true as it is false that men could not live in severe cold without flesh or fat, why should that hinder any one from adopting a Vegetarian diet in the mild climate of England? A diet recommending itself by its economy to the prudence, its pleasantness to the palate, and its innocent attainment to the benevolence and all the best feelings of man's nature. Why should any one make a supposed difficulty in the Arctic zone restrain him from a clear duty in Manchester or London? As Mr. SIMPSON, in a lecture, once pertinently asked, 'Will you defer your acceptance of Christianity until every rascal and every heathen has found it convenient to acknowledge its Divine claim?' Do let us do right ourselves. The right is ever full of happiness and blessing. We grieve for the many who wander and get wrong, but we cannot help them out of their misery by adhering to the cause of their misery—the error and the wrong. Let us obey the

sound principles of normal life ourselves, and by our happy example we shall most effectually help others."

As my purpose in publishing this Work is as much to prevent disease as to cure it, I think the following extract from "*Meliora*," the new Quarterly Magazine of the Alliance for the suppression of the sale of intoxicating drinks may be useful in shewing the importance of promoting the welfare of our fellow creatures by our own example of self-denial and action in the cause of God and man, to rescue poor souls brought in bondage by what never can add to health, strength, or real pleasure.

"INTEMPERANCE is one of the greatest social evils in this empire. Our country, which ranks so high among the nations for civilisation, liberty, and commerce, is confessedly the most drunken. Its drinking customs eat out the life of the lower classes of the people. Formerly the upper and middle classes were public scandal for their drunkenness; but now, when these are reforming, the lower classes have become the prey of this insidious and destructive vice. The facilities for drink abound, and publicans outnumber all other trades. In cities and towns spirit-shops and beer-houses are at every corner, and in the most rural districts they are numerous. In some localities they are in the proportion of 1 to every 15 houses, and throughout the country there is 1 to every 137 people. They are resorted to by our mechanics, artisans, and labourers, and alas! too frequently by their wives also:—

'Tis here they learn  
The road that leads from competence and peace  
To indigence and rapine; till at last  
Society, grown weary of the load,  
Shakes her encumbered lap and casts them out."

"Intemperance costs the country about 60,000,000*l.* a-year. It is the chief cause of most social evils. Ministers of religion testify that it is the greatest evil to their success. City missionaries regard it as the most powerful obstacle to their labour among the sunken masses of the people. Poor-law guardians ascribe to it the majority of cases of pauperism. Our judges and prison governors declare that it occasions most criminal offences. Medical men in hospitals and in general practice find it the most prolific source of disease. Governors of lunatic asylums refer the insanity of many of their unhappy patients to its dire influence. Commercial statistics show its injurious effects on trade and shipping, and vital statistics its evil influence on life.

"It is the chief cause of *pauperism*. Sir Archibald Alison, the sheriff of Lanarkshire, attributes one-half of the pauperism to intemperance. The late Archibald Prentice, who was well versed in the social condition of Manchester, says that two-thirds of the pauperism there is similarly originated. An Edinburgh inspector of the poor

made this statement: 'An experience of now nearly twenty years in the management of the poor has forced me to the conclusion that nearly two-thirds of the destitution which exists, and is relieved from the poor's funds, is traceable either to the more remote or immediate causes of intemperance.' Of 21,000*l.* expended, the same individual deducts 12,000*l.* for the fruits of drunkenness. If we take this portion as a fair average, then, of the ten millions spent in support of the poor, *six* are caused by intemperance; and of the million and a half of persons relieved, about one million are brought to poverty by drink. Were this social evil cured, or even considerably arrested, how much would taxation be lightened, and how many families would be saved from poverty.

"That intemperance is the chief cause of *crime* in this country has been frequently proved before Committees of the House of Commons on the evidence of magistrates, gaol chaplains, and others interested in the subject. From some statistics now before us, procured and published by the Scottish Association for the Suppression of Drunkenness, it is abundantly attested that nearly fifty per cent. of commitments in Scotland are directly caused by intemperance, and two-thirds of the other cases indirectly. The opinions of those who have occasion to come into closest contact with criminals have frequently expressed the same conclusion. We need not repeat what has been often quoted; but we may be permitted to give a few extracts from reports and speeches by persons whose words have authority. Matthew Davenport Hill, Esq., the recorder of Birmingham—a gentleman whose interest in social reform is known to all, and whose ample opportunity for careful examination of criminal cases, as well as his painstaking consideration of the question, entitle him to be heard with respect—made the following statement to the grand jury of Birmingham, in January 1855:—

'Those of you who bear in mind the charges which have been delivered from this bench, on the causes of crime, will naturally ask how it is that the enormous consumption of intoxicating liquors which prevails through the land—a source of crime not only more fertile than any other, but than all others added together—should have been hitherto passed by, or only have been brought under notice as incidental to some other topic. The subject has occupied my thoughts for years; strange, indeed, must have been the state of my mind if it had not forced itself upon my attention, since the evils arising from the use of intoxicating drinks meet us at every turn. And, for myself, I cannot pass an hour in court without being reminded, by the transactions which are put in evidence before me, of the infinite ramifications of this fatal pest.'

"He then goes on to say:—

'Crime, gentlemen, is the extreme link in the chain of vice forged by intemperance—the last step in the dark descent, and thousands who stop short of criminality, yet suffer all the other miseries (and manifold they are) with which the demon Alcohol afflicts his victims.'

"The Rev. John Clay, long the chaplain of Preston Gaol, and well

known as an accomplished statist and practical philanthropist, said in Thirty-first Report, 1855 :—

‘I would note the fact, that during two years I have heard 1,126 male prisoners attribute their offences—frauds, larcenies, robberies, burglaries, rapes, homicides—to drink ! And if every prisoner’s habits and history were fully inquired into, it would be placed beyond doubt that *nine-tenths* of the English crime requiring to be dealt with by the law, arises from the English sin which the same law scarcely discourages.’

‘Similar testimonies are being delivered every day by those who are connected with the administration of criminal law ; and they are sufficiently alarming to demand the attention of our statesmen, philanthropists, and the sober and industrious people. They force the conviction upon all who desire to advance social reform that some stronger restraint than has been hitherto tried should be laid on the traffic in intoxicating liquors for the protection of public virtue and the welfare of the people.

‘Intemperance is a great cause of *dis-ease*. Of course we do not mean to affirm that disease would be extirpated if the community were delivered from drunkenness. But just as the removal of filth is a prevention of cholera, so the promotion of temperance would lessen the multifarious ills which body and spirit endure from drunkenness. Bodily diseases are greatly induced by drinking. Indeed, the habitual use of intoxicating drinks is injurious to the constitution. It is an artificial mode of life inconsistent with the natural operation of bodily functions. They exercise a deleterious influence upon the nervous system, the eye, the alimentary canal, the liver, the heart, and the kidneys, as may be learned from medical opinions of the highest authority. It is well known that the greater part of those who fall victims to fever and other epidemic diseases are such as indulge in ardent spirits, and the vices to which they inflame them. On this subject the evidence of Dr. Gordon, of the London Hospital, given to the Parliamentary Committee, may be sufficient. ‘My attention,’ says he, ‘was called to it some time ago, at the time I was assistant physician to the hospital, and was in the habit of seeing the out-patients to the amount of some thousands, probably, in the course of the year. I kept an account for twelve months. . . . It amounted to 65 per cent. upon some thousands.’ Coroners bear the same evidence. Mr. Wakley asserted long ago that 900 out of 1,500 deaths annually brought before him were caused by excessive drinking. Once and again, though we believe he has expressed himself otherwise since, did this able coroner state : ‘I am surprised that the legislature, which is justly particular about chemists and druggists vending poison, is not equally so with the vendors of gin, which appears to cause such a dreadful waste of life.’

‘*Insanity* is occasioned more by this vice than by any other single influence, if we except hereditary disposition. Dr. Browne, of the



Crichton Asylum, Dumfries, in a paper on the subject, declares that of 57,520 cases in the present century which he has carefully examined, and which were treated in public Asylums, 10,717 were caused by intemperate habits. This does not include the numbers of the insane kept at home or in private boarding-houses. 'It is enough,' says this gentleman, 'That while the virtuous sorrows, the inevitable misfortunes, and the physical diseases, and the many other evils to which man is exposed, produce in fifty years 40,000 lunatics, drunkenness, drinking, the pleasures of the table, produce 10,000.' The contrast between drunken and sober countries in relation to insanity is very striking. 'In Scotland there is 1 lunatic to 563 sane persons; in Spain 1 to 7,181.' 'In Edinburgh every sixth lunatic owes his misfortune to intemperance; in Palermo every twenty-first lunatic is in the same predicament.' The late Dr. Blomfield, Bishop of London, from statistics of 1,271 lunatics, found that 649, or nearly one-half, were deprived of reason by intemperance. A most lamentable fact connected with this is, that the children of drunkards are weak, hysterical, wayward, and diseased. The late Rev. W. J. Conydear, in his able article on Intemperance in the 'Edinburgh Review,' declares that of 300 idiots in Massachusetts, 145 were the children of drunkards. These facts—and they might easily be multiplied a hundredfold—are sufficiently alarming, and call for some remedial measure to arrest a growing evil. We might assert, also, how much intemperance, and the manufacture of and traffic in intoxicating drinks injure remunerative trade and lessen the demand for productive labour. The economics of this question form an argument of singular force and of practical power, were it brought out fully, as we trust it will be in the pages of this journal. It is only necessary at present, in thus hinting at the subject, to state that, from statistics of undoubted authority, it has been proved that of 100*l.* worth of shoes, 37*l.* go the workman, 40 per cent. of earthenware, 48 per cent. of linen yarn, 66 per cent. of woollen cloth, besides 5 per cent. for making clothes. Whereas of 100*l.* spent in alcoholic drinks, only 2*l.* 10*s.* go for labour! The manufacturer of useful articles will employ 34 men at 1*l.* 5*s.* per week, where the manufacturer of strong drink will employ but *two*. Working-men should be made to understand this fact—it is worth remembering—that the manufacturer of alcoholic drinks employs but one labourer where the manufacturer of other commodities employs *seventeen*. If the destructive vice of intemperance were prevented, the demand for productive labour in useful articles would be greatly increased, and the revenue of the State would be supplied by the greater purchase of taxed goods. But the economics of this question is too great a subject for our present limits.

"It may now be asked, What is the cure proposed for this social disease? We unhesitatingly answer, that when any vice becomes dangerous to the community, it must be dealt with surgically. It must be cut off by legal restraint and moral reprehension. Those to whom ardent spirits

are a temptation ought at once and for ever to abstain from their use. These stimulants, when once their fire has kindled a passion, are not to be trifled with. The passion is like phosphorus, easily ignited and rapid in its combustion. To save such a number as annually fall into poverty, crime, disease, and an early grave; to preserve many homes which annually become a waste and a place of weepers; to save wives from widowhood, children from orphanage, and generations from hereditary diseases; to save souls from suicide, the terrible spectre of their own consciences, the accusations of Heaven, and the dread retribution, let us promote abstinence. To keep feet from falling into a pit so bottomless; appetite from craving with a thirst insatiable; means from melting into water which cannot be gathered up again; men from becoming paupers, dependent on the pitiful dole of a poor-law officer; invalids, with bloated face, blushing nose, and bloody eyes; maniacs, with 'a brute, unconscious gaze,' with *delirium tremens* peopling the room with shapes of hideous fiends, from becoming social and moral wrecks, outcasts from society and from God, let us aid in delivering the land from drunkenness.

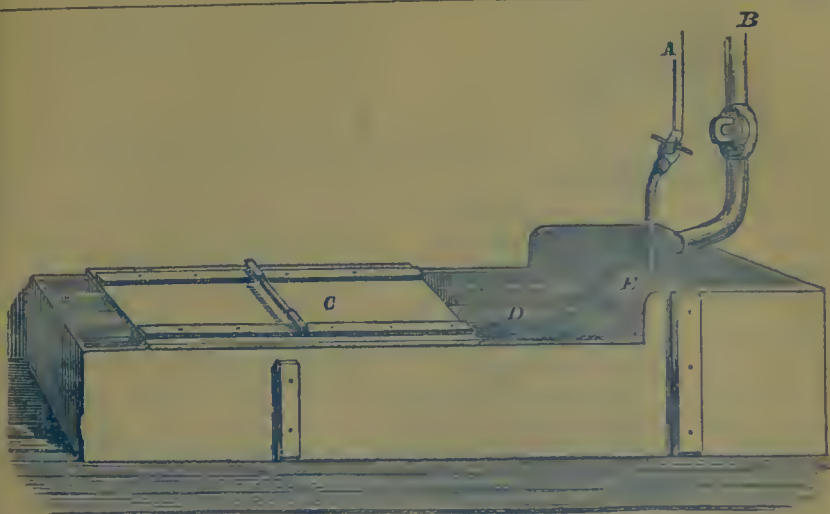
"But many of our readers may not be tempted with ardent spirits to become drunkards. They have not felt any harm from the use of strong drink. They never took too much. They let their 'moderation be known to all men.' They are exemplary citizens. But they see their fellow-citizens ruining themselves on every side, their families becoming dependent on the public, and the tax to feed and punish them grudged; but they do nothing more than show the tempted that they can play with fire and not be burned. Their weaker brethren, like Samuel Johnson, 'cannot take a little;' they cannot take coals into their bosom without being burned. Something more than has yet been attempted must be done on behalf of the drunken masses of the people. It would not be a great sacrifice to abstain for the sake of the drunkard. Sympathy with the degraded, philanthropy, patriotism, and Christianity, demand that some earnest and active and self-denying effort be made. What father would put in the power of a drunken son the temptation that would ruin him? A family has a right to protect it. If, and, for the sake of one, *tu* would willingly forgo the use of intoxicating drinks as beverages. There are hearts among us warm with a pure benevolence, who are ready to give labour and means to save a needy or perishing brother, who regularly surrender a portion of their money for philanthropic purposes. Here is a sphere for liberality and example. The community is cursed with drunkenness, and tempted by facilities for drinking. Let philanthropists combine to preserve social as they do sanitary health, and remove the temptation from the imperilled. A community has a right to protect itself; and it is a virtue to sacrifice for the prevention of sin. The weeping mother who has now to sally forth to scenes of revelry and debauch to seek her drunken son; the faithful wife that sits at home beside her cradle, and can scarcely sing a lullaby to her crying child for the sobs she heaves, and the salt tears she

sheds over the husband of her youth, who is drinking in the tavern; all the families who have any member addicted to this vice, and there are *two out of every three homes* of the humbler classes in this painful position; the tempted, who are so often dragged to spend their wages and blight their peace by indulgence in alcoholic drinks; the besotted drunkards themselves, who are given over to the insidious vice and its consequences, and who cannot resist the opportunity, would all hail deliverance, were the traffic in intoxicating liquors totally suppressed.

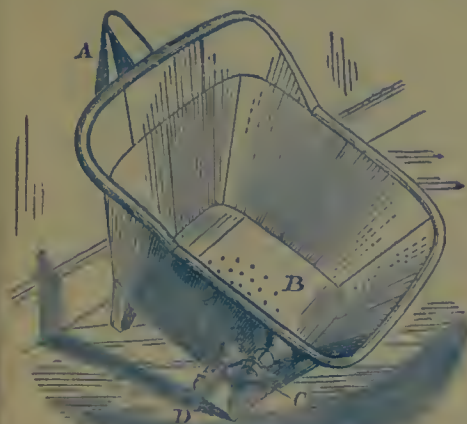
"But the evil is not merely domestic or provincial, it is national; and a people have a right to protect themselves. The patriotic and the Christian, who care for the commonweal, are bound to attempt to roll away the reproach of drunkenness from the land, and to save the tens of thousands who every year perish by this evil. More than ever is this cause growing in interest and importance. More than ever are Christian men convinced of the necessity of restraining the liquor traffic, and of suppressing it altogether, except for medicinal, artistic, and sacramental purposes. But public-houses are *licensed* by the State, and a large portion of our revenue is raised by 'the sale of what is both physically and morally injurious to the people.' That which is morally wrong can never be politically right. It is contrary to all sound morality to enact laws which will, either directly or indirectly, foster crime. That the laws at present in operation with regard to public-houses have such a tendency there can be no doubt. 'The beer-house and the gin-shop,' says the Recorder of Birmingham, 'are the authorised temptations offered by the legislature to crime.' There must be an alteration in these statutes. The conscience of the country is being aggrieved by them, and when once the public feeling is aroused on a matter of right, its demand must, sooner or later, be met. Compromise is fatal, and delay only increases the demand. Many who have never been numbered among Temperance Societies are now convinced of this necessity.

"Already beneficent results have flowed from the prohibition of the liquor traffic on one day in the week in Scotland, and from the reduction of the facilities for drinking in the morning and at night of other days. In Glasgow there has been, during three years since the passing of the Act, a reduction of police cases of drunkenness, amounting to 18,502, while the population has increased 67,000. This success has been remarkable. But much more must be done by the legislature. The advantage gained is a fixing of the lever, and so long as there is a superincumbent mass of drunkenness legally encouraged, all available force must unite to remove it."





WOOD SHALLOW BATH, such as I use at my Establishment and Free Hospital, is made of one inch deal boards, grooved and tongued, not lined or painted. It holds water well, and a good deal of it, and there is more room for the bather to lie at ease and soap well. Outside measure, 6 feet 5 inches long, 27 inches wide, and 17 inches deep. E is a flat board, 4 inches broad, to lay the back of the head upon, and it slopes down into the bath to support the back. C is a loose cover, merely put on to avoid exposure of the person. A is a steam or hot water pipe, which is carried round the bottom of the bath under a board, for a hot bath. B is a  $1\frac{1}{2}$  inch pipe brought to  $1\frac{1}{4}$  inches, for a back douche, and to fill the bath. A plug at the corner lets out the water.

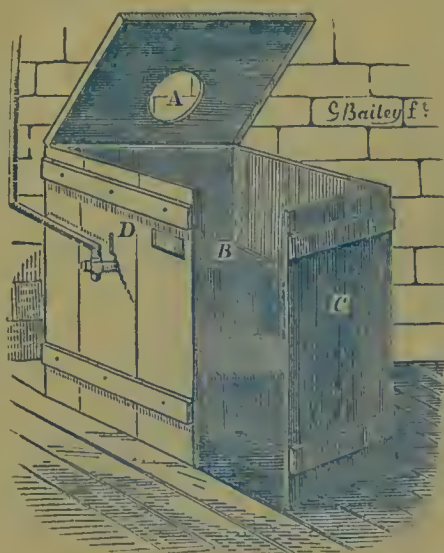


#### IMPROVED SITZ BATH.—

Since this work was commenced we have adopted a new plan of sitz bath, and find it very efficient. The shape and size are the same as at page 19; but instead of the water coming in at the back, it is conducted by a funnel and pipe A under the bath, and rises up at B through perforated holes. If a usual bath is wanted the water runs off at C, but if a shallow running sitz is required the screw or cork is taken off the pipe at D. This plan brings the water more in contact with the rectum and anus, and is highly beneficial. A cold running sitz for five minutes

is a luxury, as well as highly useful to those parts, and also to the spine.





**STEAM BOX.**—Used also for Spirit Lamp. B is the seat the person sits upon, then close the door C, and put down the lid, the head going through the hole A, 12 inches in diameter. 4 feet high, 29 inches wide, 34 inches in depth from back to front, outside measure. Put a towel round the top of the lid at A, to keep in the steam; sip cold water; have a wet napkin round the head, and the feet in hot water. D is a steam pipe, with a handle outside and a handle inside, for the bather to alter the force of steam at pleasure. The steam is sent in under the seat, and on the front of the seat hanging down to the foot-board, is a curtain of macintosh or linen, to keep the force of the steam from the legs. This bath is used from five to ten minutes, or in some cases fifteen minutes, and after it a cold

dripping sheet, a cold sponge, or cold shallow. A fomenting pad wrung out of hot water, and held to the stomach and bowels while in, is useful in some cases, and soap the body well.

For spirit lamp introduce two spirit lamps, or gas jets, near the foot-board.



Morning Worship in Marquee, see page 67.

*Steam Box, or Vapour Bath, (see engraving on opposite page.)*—Instead of allowing the steam to enter at the side, as described on the preceding page, we find it an improvement to perforate the floor-board with gimlet holes, and to let the steam ascend through them.

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## Physiological Illustrations and Notes.

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THE following engravings are copied from some of the principal works on the different subjects, and will serve as a sample of the wondrous revelations that have been made in anatomy, mostly during the last forty or fifty years, previous to which time the nature and action of the human frame was comparatively little understood. The discoveries in the nervous system are of even more recent date, and have led to an entirely different view of the functionary action of the body, now that that action is found to depend on the vitality in the ganglionic nerves, or nerves of nutrition. Many other discoveries are being yearly made, but those of Sir Charles Bell, Dr. Hall, and others, of the nature and office of the nerves, are the greatest events in medical science, since Harvey made the discovery of the circulation of the blood. Would that the medical profession acted upon these revelations in the cure of disease, and not adhere to their old antiquated Barber Surgeons' practice; this, however, it appears, is not to be changed, whatever discoveries are made upsetting all previous principles of practice. The blistering, leeches, purgatives, the narcotics and the thousand ways of punishing and whipping and cleaning out the body is pretty much the same now as it was when the Earl of Derby (Page 248) got his last doses, which composed him for his last sleep; and the curious mixtures at page 248.

With so many highly instructive and valuable works at command, and at moderate prices, it is surprising that people spend their money on light, trashy works of the Dickens and Punch school, or on the novels and tales which detail how some good man or woman got up in the morning, and how they lived the lives of saints, and said many good things, and some very common place and foolish things, and so departed without the reader knowing anything of their true character; drawing people's attention away from the standard the Bible gives us of true servants of God, and God's own commands and exhortations. Were this money spent in purchasing those works which give the wonders of creation, animate and inanimate, and which shew too the duty and wisdom of studying God's laws for health of body and mind, to enable the soul to do its work with efficiency and comfort, we should not see so many entirely ignorant of the structure and nature of their bodily frame,

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### VALUABLE WORKS OF REFERENCE.

Quain and Wilson's Anatomy, is a large and beautiful work, with coloured plates, a few of which I have copied. This work is now

brought within reach of those of moderate means: the 5 vols. royal folio, £5 5s., plates, or £8 8s. coloured.—*Walton and Maberly*.

Dr. Lardner's *Animal Physies* is a new and very beautiful work, with 500 engravings, got up in a very superior style, and well worth perusal; the latest information on human and animal physiology will be found in it.—*Walton and Maberly*. 12s. 6d.

Carpenter's *Human Physiology* is an elaborate work of 960 pages, with many engravings, and enters fully into the structure and functions of the body, and of the nervous system and its connection with the mind.—*Churchill*; 8vo. cloth, £1 6s.

Dr. Budd on the Liver, is a new and standard work, and contains some good coloured engravings of the gall bladder, gall stones, and of the liver. 14s.

Dr. Quain on the Diseases of the Rectum, contains some beautiful coloured illustrations, and shows the nature and causes of piles, hemorrhides, and other diseases of the rectum.—*Walton and Maberly*; 7s. 6d.

Chambers's *Physiology*; *Educational Series*, contains some clever engravings.—1s. 6d.

Dr. Horner's *Three Letters to a Non-Medical Friend*, gives a very plain and interesting statement of the functions of the absorbents, and secretive and excretive systems, with other interesting matter, and some good engravings.—*Ward and Co., London*; 1s. 6d.

*Fruits and Farinacea, the Proper Food of Man*, by J. Smith, is an exceedingly instructive volume, and should be read by all.—*Churchill, London*; 5s.

Kirke and White's *Hand-Book of Physiology*; very good and condensed, with many good engravings.—*Walton and Maberly*; 12s. 6d.

Graham's *Science of Human Life*, contains many engravings, and much valuable information on many points, as to diet and mode of life, and is well worth reading.—*Horsell, 492, New Oxford Street*; 6s.

Jones and Sieveking, *Pathological Anatomists*.—*Churchill, London*.

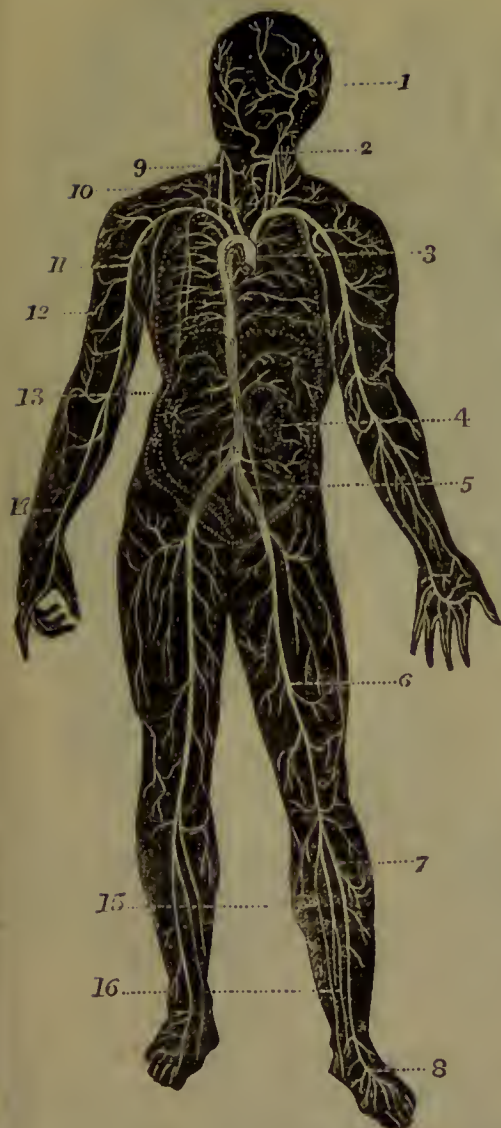
Riadore, on *Spinal Irritation*, excellent. 5s. 6d.

*Hereditary Diseases*, by Dr. Whitehead.—*Churchill, London*.

*Spermatorrhea*, by Sallemund.—*Churchill, London*.

The three latter works should be read by every man before he enters on the active duties of life.

"The following *Elementary Substances* may be obtained by chemical analysis from the human body.—Oxygen, Hydrogen, Nitrogen, Carbon, Sulphur, Phosphorus, Sileon, Chlorine, Fluorine, Potassium, Sodium, Calcium Magnesium, and probably sometimes Manganese, Aluminium, and Copper. Thus of the 55 elements of which all known matter is composed, nearly one third exists in the human body. A few others have been detected in the bodies of other animals; but no element has yet been found in any living body, which does not also exist in inorganic matter."—*Kirke and White*.



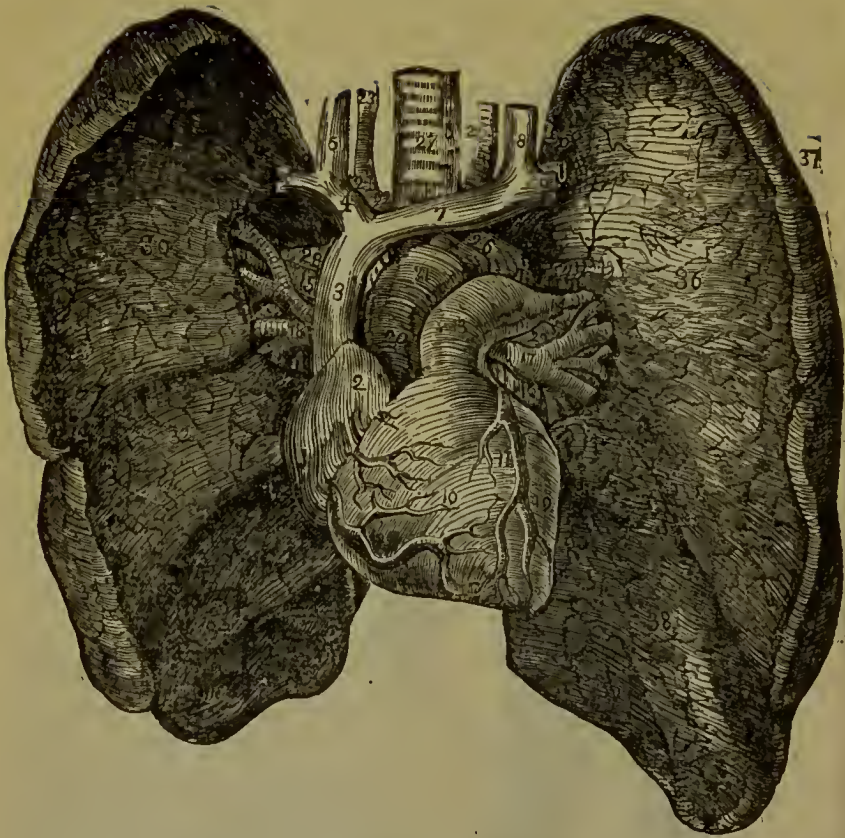
THE following is from Dr. Lardner's beautiful work, which should be in every Library, it is very cheap, price 10s., with its 520 finely executed engravings.

Fig. 1, Temporal Artery; 2, Carotid do.; 3, Aorta do.; 4, Renal do.; 5, Iliac do.; 6, Femoral do.; 7, Anterior Tibial do.; 8, Tarsal do.; 9, Vertebral do.; 10, Subclavian do.; 11, Axillary do.; 12, Brachial do.; 13, Coeliac do.; 14, Radial do.; 15, Posterior Tibial do.; 16, Peroneal do.

**General View of the Arterial System.**—From the upper part of the crook of the aorta branches diverge, two of which, bending under the clavicles, descend along the arms, taking the name of the brachial arteries; and at the point where the aorta descends towards the navel, other branches diverge right and left, descending along the legs, where they take the name of femoral arteries. There are numerous other ramifications, as shown in the general illustration of the arterial system, where the names of the principal arteries are indicated.—*See Observations on the Circulation, page 25 of this book.*

THEORETICAL DIAORAM OF THE ARTERIAL OR PURE BLOOD CIRCULATION; THE VENOUS OR EXHAUSTED BLOOD RETURNS TO THE HEART BY ANOTHER SET OF VEINS.



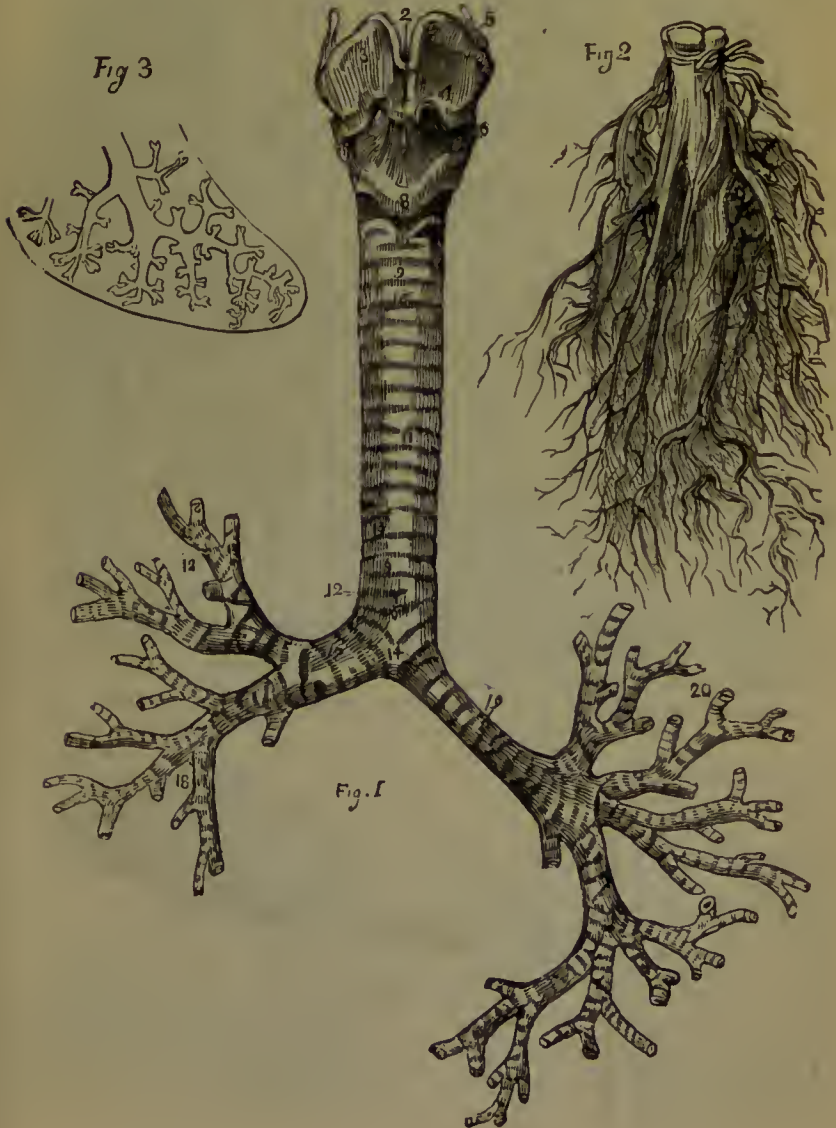


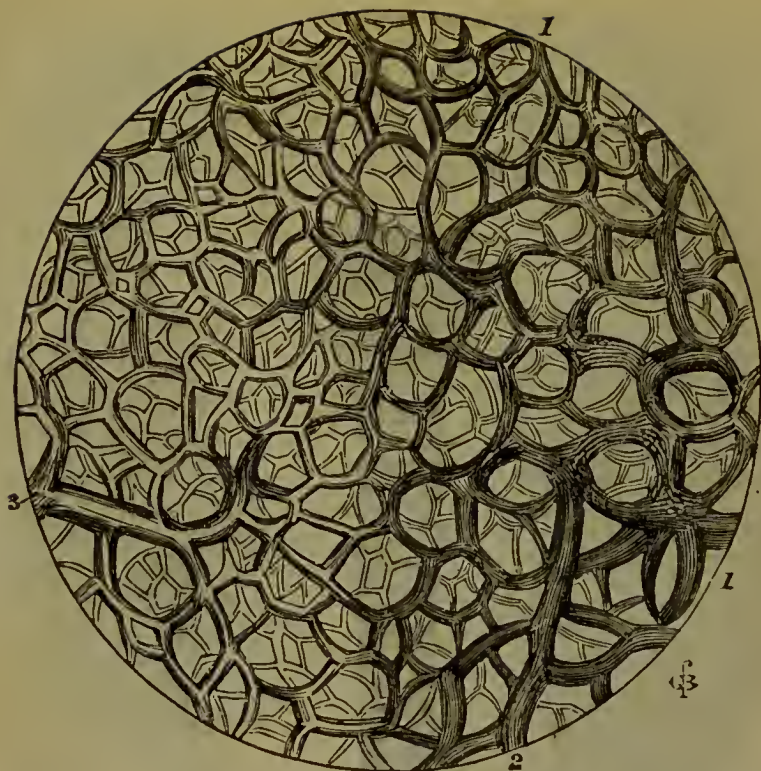
ANTERIOR VIEW OF THE LUNGS AND HEART WITH THEIR GREAT VESSELS.—(Quain.)

1, right auricle of the heart; 2, appendix auricle; 3, superior vena cava; 4, right vena innominata; 5, right jugular vein; 6, right subclavian vein; 7, the left vena innominata; 8, the left internal jugular vein; 9, the subclavian vein; 10, the right ventricle; 11, branches of the great coronary artery; 12, ditto of the right; 13, pulmonary artery; 14, left ditto; 15, the right pulmonary artery entering the right lung; 16, appendix of left auricle; 17, one of the left pulmonary veins; 18, one of the right pulmonary veins; 19, left ventricle; 20, ascending aorta; 26, left subclavian artery; 36, 38, interior surface of the lungs.

**Respiratory Organs.**—The following engraving of the windpipe shows also the large bronchial tubes branching out into the substance of the lungs. The fine bronchial tubes, fig. 2, are prolongations of the larger branches. All the bronchial tubes are lined with a ciliated mucous membrane lining, and with air cells exceedingly minute opening into them, as fig. 3; all these large and finer tubes and the minute air cells have blood veins called arteries lining their sides, besides nerves and venous vessels to carry away the exhausted blood; every time we draw in the air into the lungs it is forced by an average power of 4 ewt. into all these tubes and air cells to bring it in contact with the blood veins, which are of such delicate structure that the air is immediately absorbed into the blood

through the sides of the veins, and turns the blood to a scarlet colour by the oxygen contained in the air. The lungs occupy the chest, and are in form of lobes, there being three in the right side and two in the left; between the latter is placed the heart, occupying as it were the place of one lobe, the whole are contained in a bag called the pluera, which is moistened by serum that the lungs may play easy. When the blood is impoverished or inflamed this serum is wanting, and adhesion often takes place.—(*Engravings from Quain and Wilson.*)



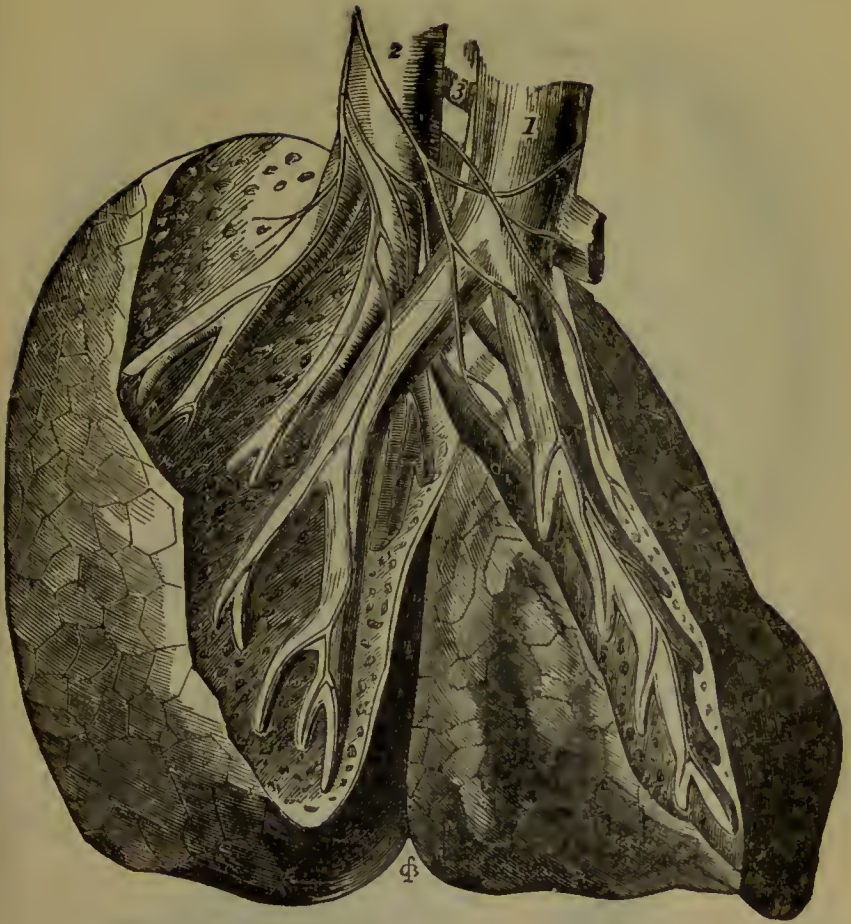


A minute portion of the human lung magnified 50 diameters, showing the capillary net-work formed by the ultimate ramifications of the pulmonary artery and veins. 1, 1, the arterial (*pure blood*) side of the figure; 2, a large branch of the pulmonary artery supplying the plexus with blood. 3, a venous (*exhausted blood*) trunk conveying the blood from the capillary plexus.—(Quain).

The windpipe, one lung, and the bronchial tubes shown on the left, the substance of the lungs cut away; *a* is the top of the windpipe. It is estimated that the surface of the bronchial tubes and air cells in the lungs, cover a space of thirty thousand square inches, underneath which the blood circulates, and to this space the air comes to oxygenize the blood.



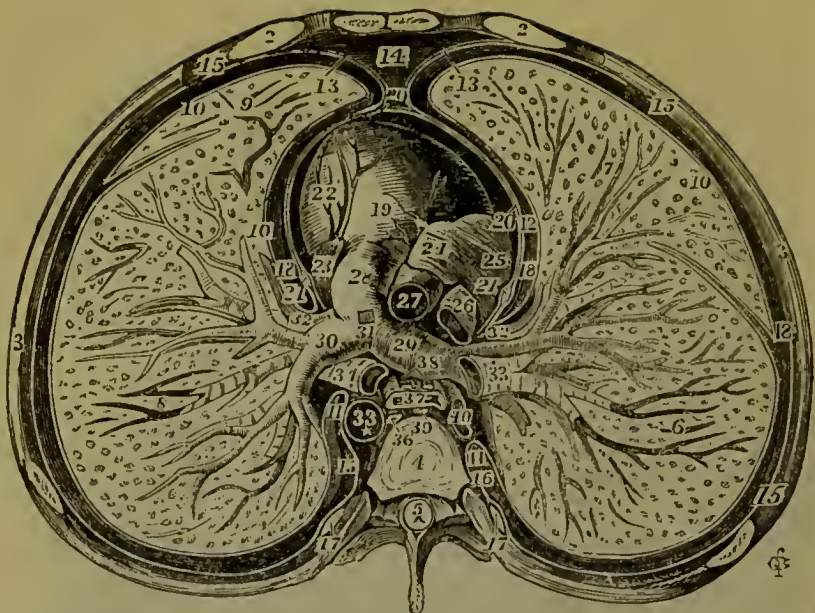




A portion of the lung, showing the distribution of the nervous filaments of the pulmonary plexuses around the vessels and bronchial tubes. 1, the pulmonary vein bringing blood to be oxygenised; 2, the pulmonary artery returning blood now fit for circulation; 3, the bronchial tube, the nervous filaments are seen ramifying upon those vessels to give motion, sensation, and power of chemical change in the blood.—(Engraving from Quain.)

"The lungs are covered with a fine membrane, a reflection of the pleura, called *pleura-pulmonalis*. The internal surface of the air-cells is covered with a very fine, delicate, and sensible membrane, which is continued from the larynx through the trachea and bronchia. The arteries of the lungs are the bronchial, a branch of the aorta, which carries blood to the lungs for their nourishment; and the pulmonary, which circulates the blood through the air-cells to undergo a certain change. The pulmonary veins return the blood that has undergone this change, by four trunks, into the left auricle of the heart. The bronchial veins terminate in the vena azygos. The nerves of the lungs are from the eighth pair and great intercostal. The absorbents are of two orders; the superficial, and the deep-seated; the former are more readily detected than the latter. The glands of these viscera are called bronchial. They are muciparous, and situated about the bronchia."—(Dr. Hooper.)

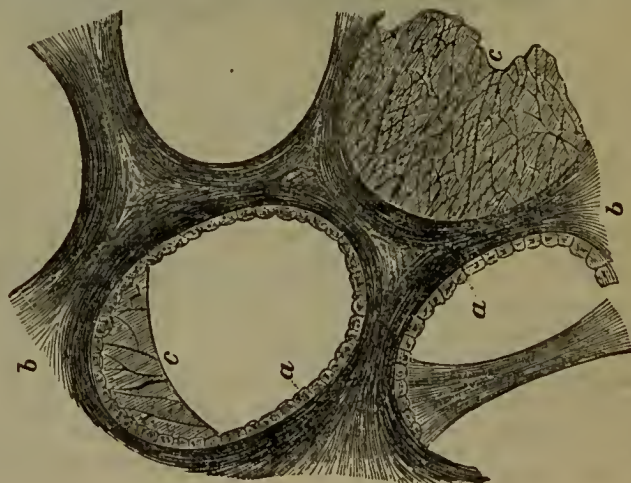


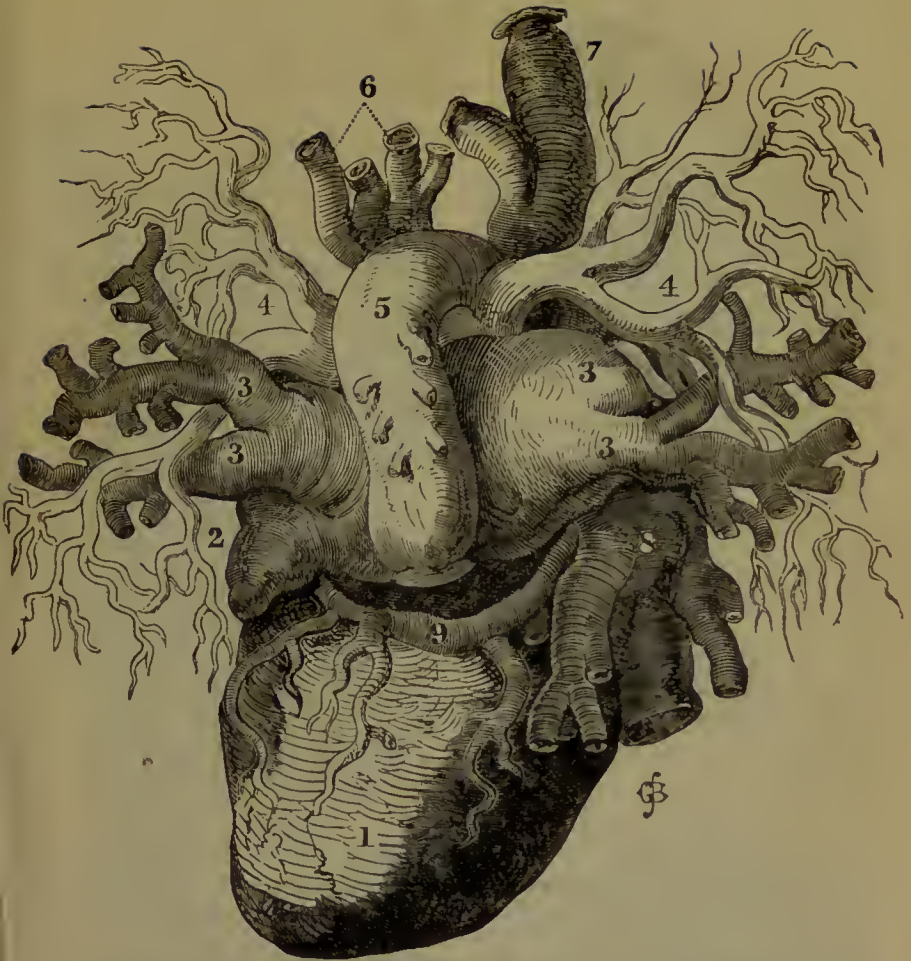


A cross section of the Chest, showing the relative position of its viscera and large vessels, with the reflection of the plura.—(Quain.)

3, 3, the upper borders of two ribs forming the boundaries of the section; 4, the upper surface of a dorsal vertebra (spine); 5, section of spinal marrow; 6, section of the right lung, its superior lobe; 7, section of middle lobe; 8, section of lobe of left lung; 9, its inferior lobe, the structure of the lung is seen upon the surface of these sections; 10, 10, the pleura pulmonalis of the two lungs; 12, 12, the pleura lining the external surface of the pericardium or heart bag at each side; 17, the sympathetic nerve on each side; 18, 18, the cavity of the pleura at each side; 19, the heart; 20, 20, pericardium enclosing the heart; 22, left ventricle; 19, right ditto; 27, ascending aorta; 28, right pulmonary artery; 30, left ditto; 36, thoracic duct; 37, œsophagus or gullet; 39, right pneumogastric nerve.

Air cells of the lungs magnified 50 diameters; *a*, epithelial lining of the cells; *b*, fibres of elastic tissue; *c*, delicate membrane, of which the cell mille is constructed with elastic fibres attached to it.

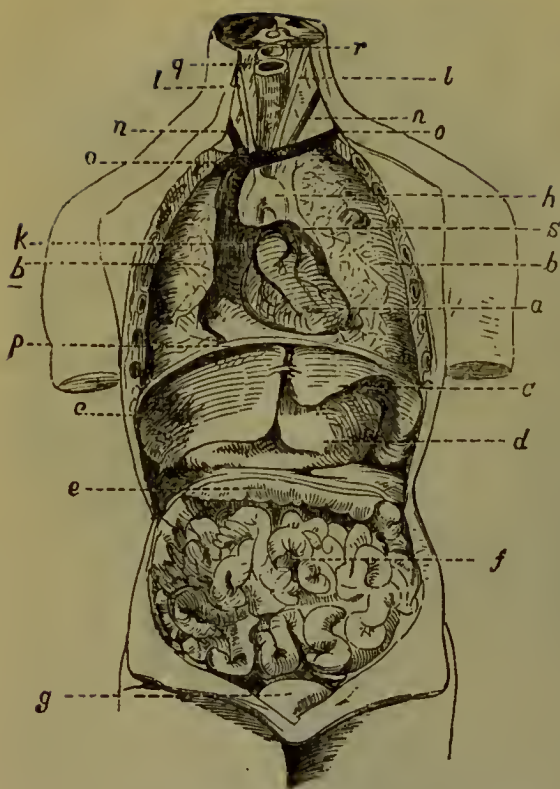




THE HEART—FROM SIR CHARLES BELL'S ANATOMY OF THE HUMAN BODY.

Fig. 1, left ventricle; 2, left auricle; 3, 3, 3, 3, pulmonic veins; 4, 4, two great branches of pulmonic artery; 5, aorta; 6, carotids and subclavians; 7, cava descendens; 8, cava ascendens, with all its branches from the liver; 9, great coronary vein running along the back of the heart, betwixt the auricle and ventricle in a groove surrounded by fat.

On an average one hogshead of blood passes through the heart every hour, night and day, six ounces at every beat. Lardner says, that if a syphon gauge was inserted into an artery, a column of blood would rise in the tube to the height of seven and a half feet, so great is the force. He also says, "The arteries are flexible tubes composed of three coatings, the innermost or first of which is a thin and extremely smooth membrane lining the ventricle, and is adapted to allow free flow to the current of the blood. This tube is sheathed in another, consisting of a thick, yellowish, highly elastic substance, and of annular structure, and of involuntary museular fibres, the rings composing it having their planes at right angles to the direction of the artery. This is again invested with an external coating of dense and close cellular texture. Thus, the structure of the arteries may be said to resemble the hose of a fire-engine."



*a*, the two ventricles of the heart; *k*, the right auricle; *s*, the left auricle; *h*, the aorta; *l l*, the carotid arteries; *n n*, the jugular veins; and *o o*, the subclavian veins, terminating in *m*, the superior vena cava; *b b*, the lungs; *q*, the windpipe; *r*, the gullet; *p*, the diaphragm; *c c*, the liver; *d*, the stomach; *e*, transverse arch of the colon, part of the large intestines; *f*, the small intestines; *g*, the bladder.

FRONT VIEW OF THE CONTENTS OF THE CHEST AND BELLY.

**THE LIVER.**—Until within a comparatively recent period, the entire functions of the liver have been little understood, and little has been written on the subject. Budd, on the Anatomy and Functions of the Liver, is considered the best work. The liver has been, and is now, too commonly considered with respect to its office, as merely an organ for purifying the blood of the bile or gall, and applying it to the stimulating of the bowels. This is one important office which it performs; but it has other important functions as a blood making organ, and from this not being taken into account in the treatment of disease, serious errors are committed by giving strong doses of medicine, which so weaken the organ, that its power of forming nutritive matter for enriching the blood, is sometimes destroyed. Saccharine matter or sugar, and the red corpuscles in healthy rich blood, are extensively formed in the liver, and passes into the circulation. When the exhausted blood enters the liver by the hepatic artery, or vein, it has no red corpuscles, but is charged with impurities drawn out of the various tissues, exhausted mucous, and lymphatics; here the blood is subject to a process through the electric power of the ganglionic, or nutritive nerves, by which the impurities are formed into gall, and deposited in the gall bladder, from where it is expelled through the gall duct, into the duodenum, where it mixes with the digested food and pancreatic juice, from the pancreas or sweet bread, and passes into the bowels, where it acts as a stimulant.

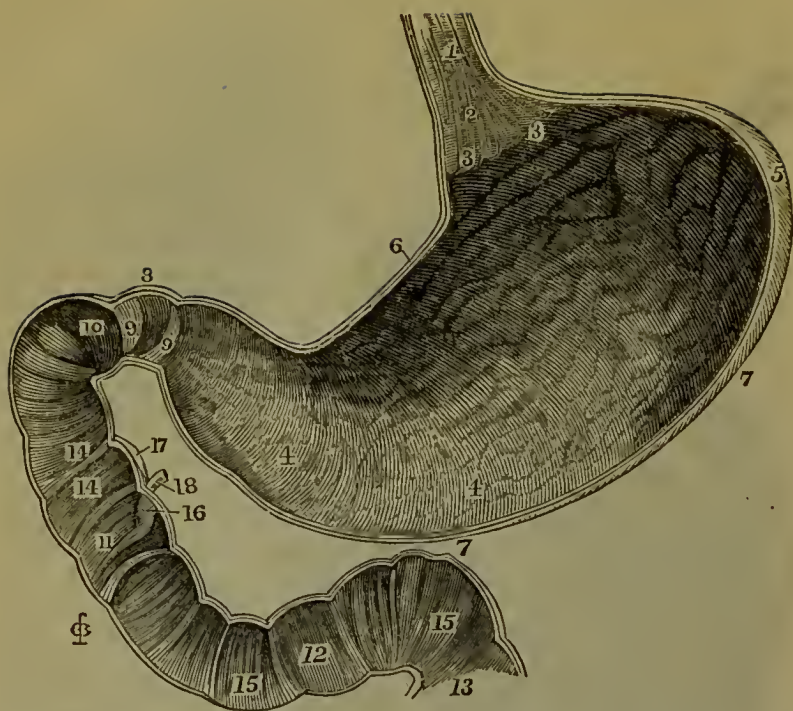




Fig. 1, the œsophagus; 2, the great, or cardiac extremity of the stomach; 3, its lesser, or pyloric end; 4, a constriction corresponding with the pylorus; 5, the superior, or lesser curve of the stomach; 6, its inferior, or greater curve; B, the duodenum; 7, its ascending portion; 8, its descending portion; 9, its transverse portion; 10, the termination of the pancreatic duct, opening into the descending portion of the duodenum near its inferior angle; 11, the termination of the ductus communis choledochus; 12, the ductus communis choledochus; 13, the common hepatic ducts; 14, the cystic duct; 15, the gall bladder; C, C, the small intestine; 16, the upper part of the jejunum where it is continuous with the duodenum; 17, 17, the jejunum; 18, 18, the ileum, of a lighter colour than the jejunum; 19, the termination of the ileum in the large intestine; D, the cæcum; 20, the cul-de-sac of the cæcum; 21, the appendix vermiformis, connected with the cæcum by a delicate mesentery; 22, E, the ascending colon; F, the transverse colon; G, the descending colon; 22, 23, the longitudinal bands of muscular fibres which produce the peculiar sacculated character of the colon; H, the sigmoid flexure of the colon; I, the rectum, in which the sacculated appearance is lost; 24, some of the longitudinal muscular fibres seen upon the rectum; 25, the sphincter ani.

THE STOMACH, DUODENUM, COLON, SMALL BOWEL, AND RECTUM.—From Quain.

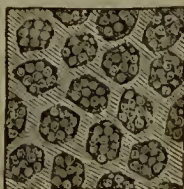




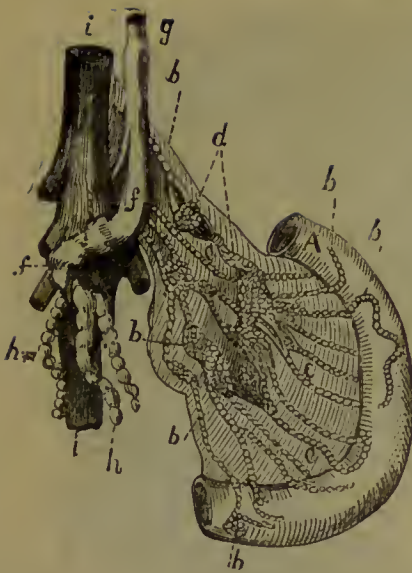
DISPOSITION AND STRUCTURE OF THE MUCOUS MEMBRANE OF THE ALIMENTARY CANAL.

A longitudinal section of the stomach and duodenum, showing their internal surface, with the arrangement of the mucous membrane.—*Quain*.

Fig. 1, the lower part of the œsophagus; 2, the cardiac orifice of the stomach; 3, 3, the abrupt border formed by the termination of the cuticular epithelium of the œsophagus at the cardiac opening of the stomach; 4, 4, the rugæ of the mucous membrane; 5, the great end of the stomach, in which the rugæ of the mucous membrane are less marked than in the middle of the organ; 6, the lesser curve of the stomach; 7, 7, the greater curve; 8, the pylorus; 9, 9, two segments of a spiral fold of mucous membrane situated in the pyloric opening; 10, the ascending portion of the duodenum; 11, the descending portion of the duodenum; 12, the transverse portion of the duodenum; 13, the commencement of the jejunum; 14, 14, the first valvulæ conniventes, which are of small size; 15, 15, larger valvulæ conniventes; 16, the papilla, upon which the ductus communis choledochus and pancreatic duct terminate; 17, a part of the ductus communis choledochus; 18, the pancreatic duct near to its termination.

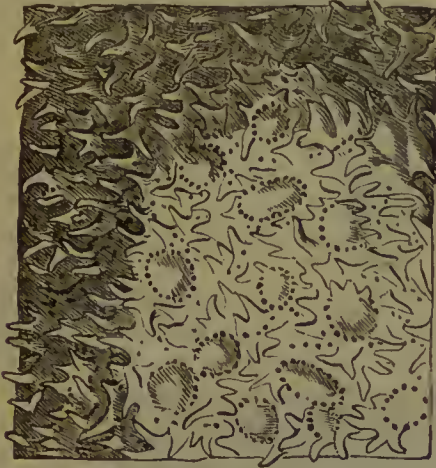


MUCOUS MEMBRANE OF THE STOMACH, SHOWING THE CELLS.



A portion of small bowel attached to the mesentery, showing the lacteals proceeding through the mesentery to convey the nutriment from the bowels to the thoracic duct; the dotted appearance of the lacteals shows the glandular structure, and in these glands the chyle or nutriment undergoes an important change before it reaches the thoracic duct. See page 25.

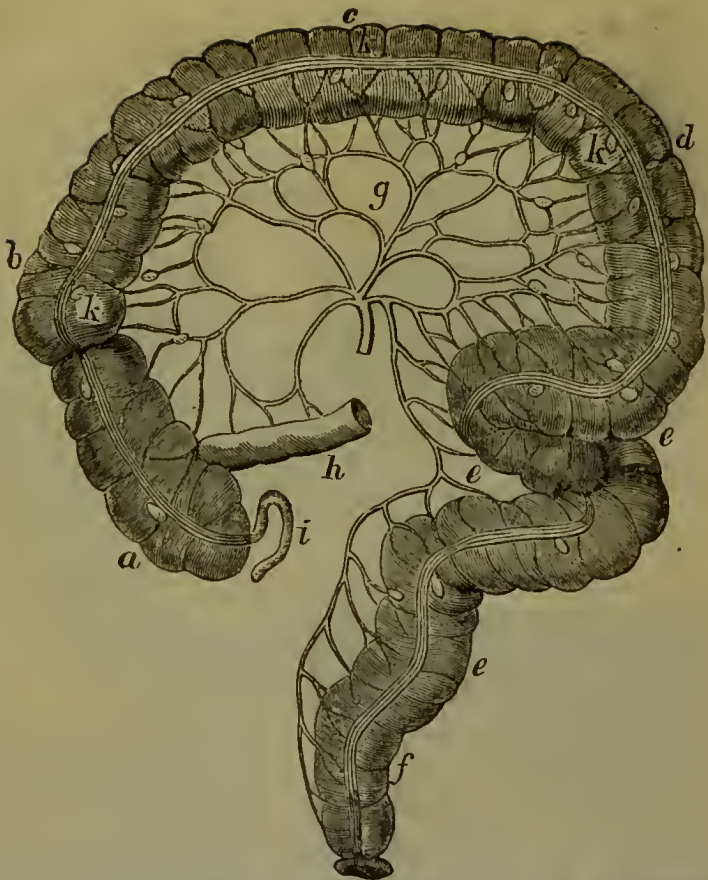
A A, a portion of the small intestines (jejunum); b b b b, lacteal vessels; c c c, the mesentery; d d, mesenteric glands; f f, the receptacle of the chyle; g, thoracic duct; h h, lymphatic vessels from other parts of the body; i, the aorta.



Part of a patch of Peyer's glands from the inside of the small bowel, showing also the intestinal villus, or absorbents which take up the nutriment out of the digested matter or chyme in the bowel and convey it to the thoracic duct. See page 337.

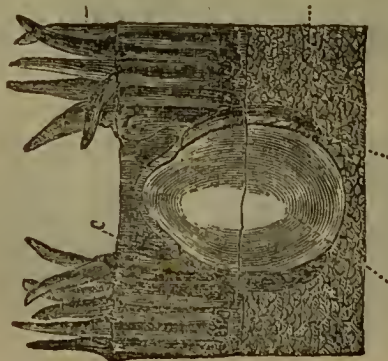


One of the solitary glands in the bowel; all these glands either take up matter and change its character, or they give out matter to aid in the processes of assimilation.



The colon or large bowel, showing the mesenteric arteries which supply it with blood. *a*, *b*, *c*, *d*, *e*, the colon, showing the sacculated form and general arrangement; *f* the rectum; *h*, the small intestine terminating in the colon and forming the ileo-cæcal valve; *g*, the mesenteric arteries.

Side view of a portion of intestinal mucous membrane imbedded in the sub-mucous tissue, the small joints project inside the bowel and take up the nutriment.

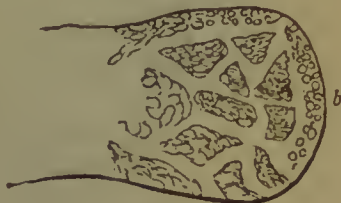






Portion of small bowel attached to the mesentery with the veins to supply arterial blood.

The small intestinal villus, which, as is seen by the engravings, page 335, projects into the bowel to take up nutriment out of the digested food or chyme, are curiously constructed with absorbent cells at the points so that they only take up fluid.

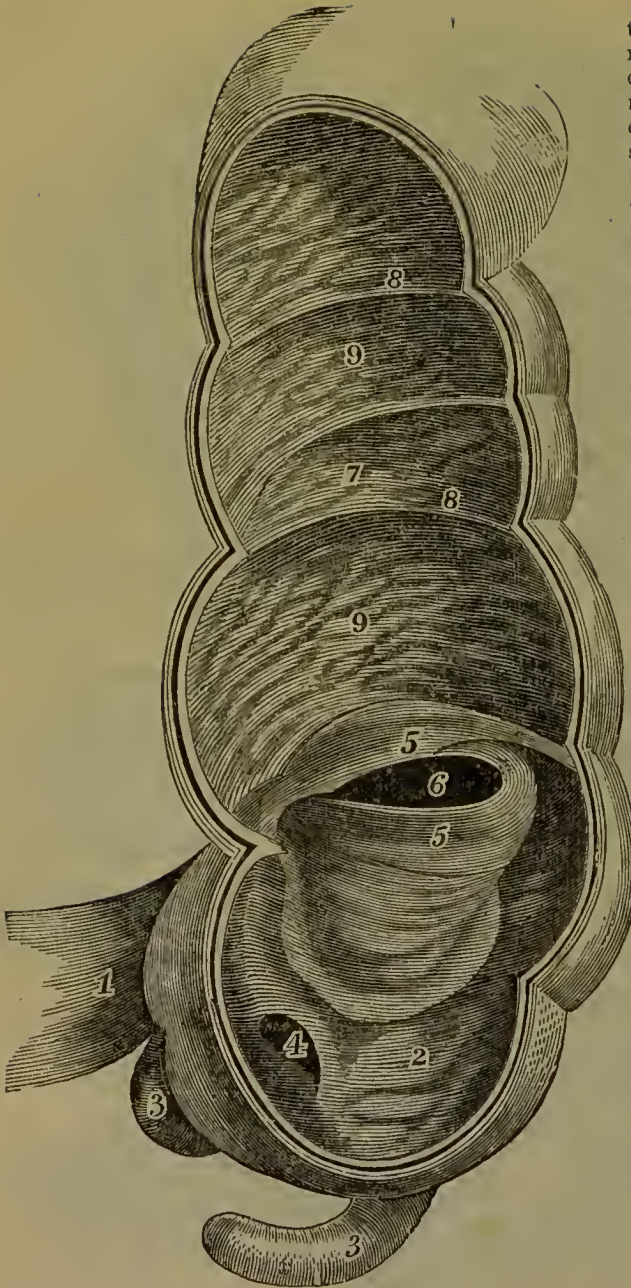


Extremity of intestinal villus: seen at *a*, during absorption, and showing absorbent cells and lacteal trunks, distended with chyle; at *b*, during interval of digestion, showing the supposed peripheral network of lacteals.

The annexed engraving represents the blood-vessels of an intestinal villus, with the capillaries or minute veins: the larger veins, one carrying nutritive or arterial blood into the mass, the other large vein carrying the exhausted blood back for renewal.





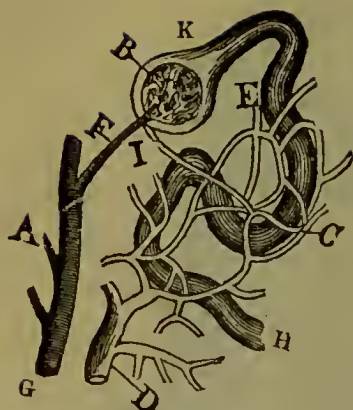


THE CECUM.

The Cæcum is the commencement of the colon, or large gut, and rises from the lower part of the right side of the bowels. Smith says it has a digestive office; others think some change in the matter which has passed the bowels takes place; but nothing certain is known. Hard substances, such as buttons or fruit stones, which have passed the bowels, lodge here sometimes, and cause mischief. Sometimes it is inflated with wind, and has led to supposition of tumour, causing unfounded alarm. The muscular bands of the colon are well developed.

Fig. 2, a section of the cæcum and part of the colon, with the lower termination of the ileum, showing the ileocaecal valve; 1, the ileum near to its termination; 2, the cul-de-sac of the cæcum; 3, 3, the appendix vermiformis; 4, the entrance of the appendix vermiformis; 5, 5, the two semilunar segments forming the ileocaecal valve; 6, the opening of the ileum into the cæcum; 7, the colon; 8, 8, valvular projections of the mucous membrane, forming the boundaries of the sacculi of the large intestine; 9, 9, the surface of the mucous membrane raised into minute folds.



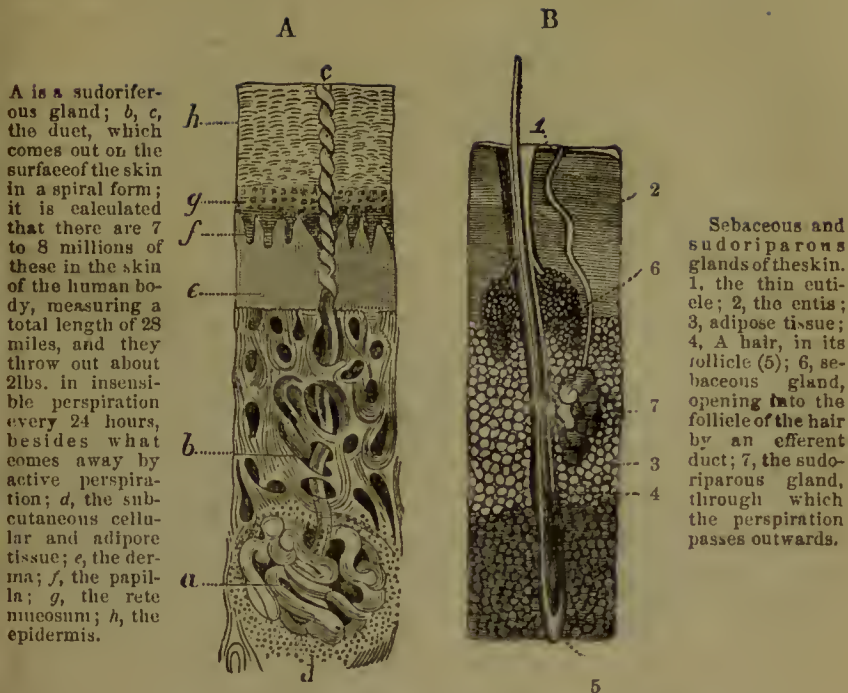


THE KIDNEYS.

the same time, extracting the urine from the blood. *G* is the vein bringing the blood into the kidneys. *A* and *F* are small veins that branch off like twigs in great numbers from the main veins, and each end in a tuft or ball of veins *B*. *H* is a uriniferous tube, one end of which, *K*, incloses the tuft of veins *B*, from which tuft it extracts the urine from the blood, and carries it down to *H*, and forward to large ducts which receive all the tubes, and convey their contents (urine) into the bladder. A vein *I* takes away the purified blood and unites with a number of other similar veins, *E* and *C*, which are performing the same office to other uriniferous tubes. These unite in the vein *D*, and carry the blood back through various intricate tubes again to the heart, to be again mixed with new material, which, after being pumped into the lungs to receive the oxygen from the air, again comes round to the same minute vessels, to be again purified. See *Kirke*, as follows:

“**SECRETION OF URINE.**—The separation of urine from the blood is probably effected, like other secretions, by the agency of gland cells, and equally in all parts of the urine tubes; the urea and uric acid, and, perhaps, some of the other constituents existing ready formed in the blood, may need only separation, that is, they may pass from the blood to the urine without further elaboration; but this is not the case with some of the other principles of the urine, such as the acid phosphates and the sulphates, for these salts do not exist in the blood, and must be formed by the chemical agency of the cells. The large size of the renal arteries and veins permits so rapid a transit of the blood through the kidneys, that the whole of the blood is purified by them. The secretion of urine is rapid in comparison with other secretions, and as each portion is secreted it propels those already in the tubes onward into the pelvis. Thence through the ureter the urine passes into the bladder. Observations show how fast some substances pass from the stomach through the circulation, and through the vessels of the kidneys. Ferrocyanate of potash so passed on one occasion, in one minute; vegetable substances, such as rhubarb, occupied from sixteen to thirty-five minutes.” (*Kirke*, 339.)





SECTIONAL CUT OF THE SKIN HIGHLY MAGNIFIED.

Fig. A shews the cork screw pores of the skin, computed at eight millions in a human body, and twenty-eight miles in length; these discharge from two to three pounds of waste matter in twenty-four hours. B is a magnified section of the skin, shewing the position and growth of a hair.

**STRUCTURE OF SKIN.**—Taking the skin, in the ordinary popular acceptance of the term, as the tegumentary coating of the body extending from the exterior surface to the muscles and other organs, it may be considered as consisting of three distinct layers, the innermost of which is composed of cellular and adipose matter of soft texture. The middle, called the *true skin*, *derma* or *corium*, is a strong and tough web of interlaced fibres, pervaded by blood-vessels, lymphatics, and nerves; and the external, called the *epidermis*, is a species of semi-transparent varnish, totally divested of all vascular or fibrous organs, and altogether insensible. The thickness of this covering, including all its three layers, though varying much in different parts of the body, nowhere exceeds a small fraction of an inch; and it will therefore be apparent that its structure can only be submitted to observation and analysis by means of the microscope.—(*Lardner*.)

#### MUCOUS MEMBRANES.

"The *mucous membranes* line all those passages by which internal parts communicate with the exterior, and by which either matters are eliminated from the body or foreign substances taken into it. They are soft and velvety, and ex-



tremely vascular. Their basis, or proper texture, seems to belong to the albuminous structures. The internal, or free surface, of the mucous membranes is at every part invested with one or more layers of epithelial cells, which are separated from the vascular tissue by the layer of basement membrane.

The mucous membranes are described as lining certain principal tracts. 1. The *digestive tract* commences in the cavity of the mouth, from which prolongations pass into the ducts of the salivary glands. From the mouth it passes through the fauces, pharynx, and œsophagus, to the stomach, and is thence continued along the whole tract of the intestinal canal to the termination of the rectum, being in its course arranged in the various folds and depressions, and prolonged into the ducts of the pancreas and liver, and into the gall-bladder. 2. The *respiratory tract* includes the mucous membrane lining the cavity of the nose, and the various sinuses communicating with it, the lachrymal canal and sac, the conjunctiva of the eye and eyelids, and the prolongation which passes along the Eustachian tubes and lines the tympanum and the inner surface of the membrana tympani. Crossing the pharynx, and lining that part of it which is above the soft palate, the respiratory tract leads into the glottis, whence it is continued, through the larynx and trachea, to the bronchi and their divisions, which it lines as far as the branches of from one fiftieth to one-thirtieth of an inch in diameter. 3. The *genito-urinary tract*, which lines the whole of the urinary passages, from their external orifice to the termination of the tubuli uriniferi of the kidneys, extends into and through the organs of generation in both sexes, into the ducts of the glands connected with them, and in the female becomes continuous with the serous membrane of the abdomen at the fimbriæ of the Fallopian tubes.”—(*Kirke*.)

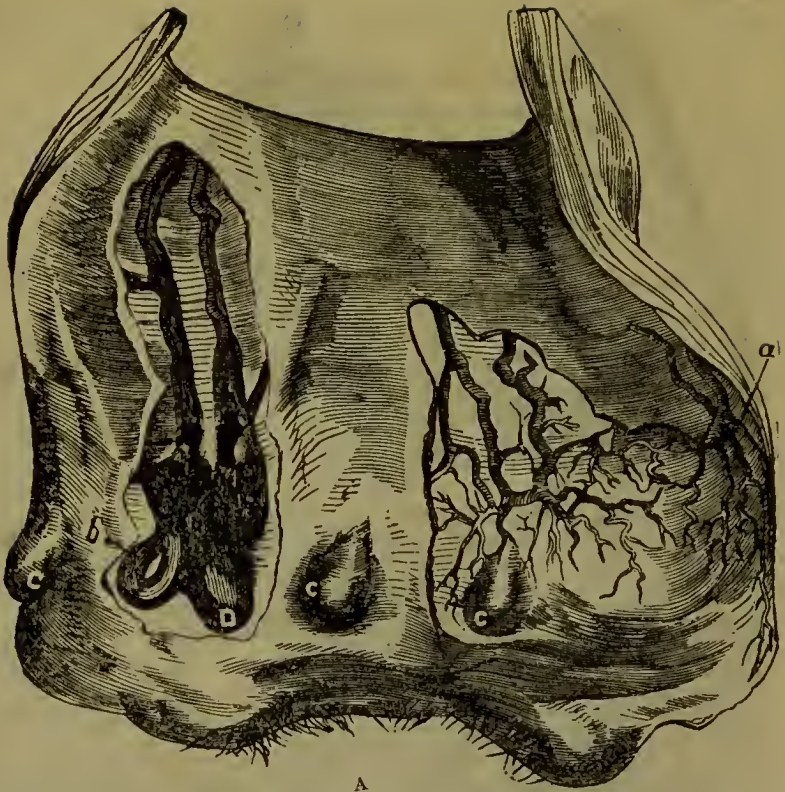
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#### DISEASES OF THE RECTUM (*the last part of the bowel*).—PILES, &c.

THE following four engravings are from “Quain’s Diseases of the Rectum,” the illustrations in the work are finely coloured, and of course give a more correct idea of the blood vessels. I have inserted these the full size, for the purpose of shewing the nature and cause of piles, a complaint so very common from drinking ardent spirits and other alcoholic beverages,—from sedentary habits with the abstemious,—and the want of cold water application in the form of sitz baths. No. 1 shews the arteries or nutritive blood vessels. No. 2 shews piles formed and forming. The exhausted blood veins are shewn gorged and enlarged from want of muscular power in the vein to propel the blood, causing distension, and eventually permanent enlargement and abscess. The explanations to each engraving are sufficiently plain. See Pages 130 and 49 of this work, “Observations on Piles.”



The last part of the bowel and anus, or seat. The lower end of the rectum laid open is seen from within. The mucous membrane has been removed from the upper and lower parts, but it still remains over the middle. *a*, the arteries of the lower end of the gut, contrasting with *b*, those at the upper end. *c*, indicates the mucous membrane. *a*, anus, or seat.



ENGRAVING II.—A small piece of the gut seen in the same way, from within, and showing, by the removal of the scraps of the living membrane—*a*, Arteries; *b*, Veins; and *c*, hæmorrhoids, in an incipient stage, consisting of fusiform dilations of veins. *A*, the seat.

ENGRAVING III.—The rectum, with large veins in its surface, and perforating its wall; with hæmorrhoids, seen to be lower than the skin, and encircling the anus. *a*, The sphincter ani muscle notched at the middle, and here are seen pale subjacent fibres; *b*, The lavator ani; *c*, The margin of the skin; *d*, hæmorrhoids projecting beyond the sphincter and the skin; *e*, Veins. A piece of metal passed through the gut at the seat shows piles at each side.—See page 345.

ENGRAVING IV.—The bowel being partially laid open and stripped of the mucous membrane, enlarged and tortuous veins are shown terminating in the hæmorrhoids, (piles) which are seen to hang below the sphincter.—This drawing has been taken from the case represented in the preceding figure. *a*, The cut edges of the bowel at the upper end of the division; *b*, the sphincter; *c*, hæmorrhoids, where cut through; *d*, the veins outside the gut; *e*, the veins within, seen to be large and tortuous; *f*, piles formed by the congested blood vessels being distended.—See page 346.

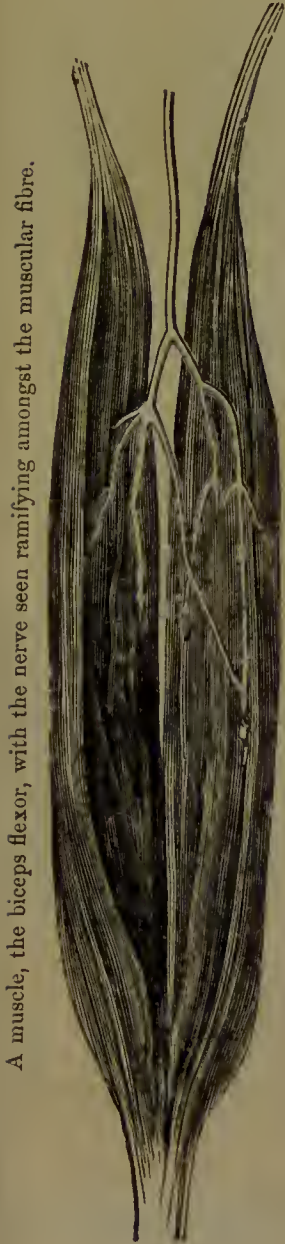








"THE MUSCLES OF THE BODY are the agents by which its different efforts and movements are performed. In ordinary language they are known by



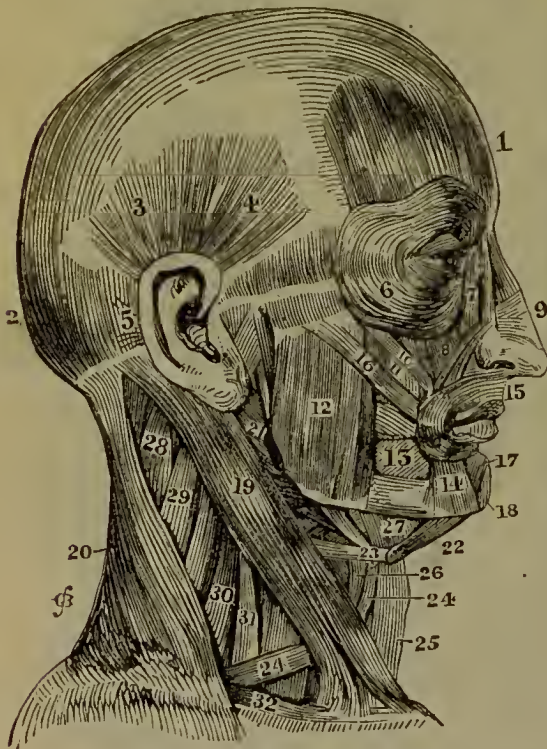
A muscle, the biceps flexor, with the nerve seen ramifying amongst the muscular fibre.



MUSCLES OF THE HAND STRIPT OF THE SKIN.

the name of flesh. Flesh is muscle. A muscle is a compound structure, made up of cellular tissue for its basis, which encloses it in its areole fibrine as the essential constituent. Tendinous fibres are superadded in most muscles, particularly at their extremities, forming the means of attachment to the perisotum and the bones. When we look at a muscle dissected it evidently appears made up of fibres arranged in a defined direction; several of these are observed to be aggregated into bundles, each of which is detached from the rest by a thin lamilla of delicate cellular tissue. Each bundle again admits of being separated into fibre, and these into fibrilla; and the separation may be continued until we at length arrive at some so minute as to be incapable of further division. The muscles thus formed of bundles or groups of fibres, either singly or in various combinations, draw upon the different parts of the skeleton to which they are attached and put them in motion or steady and fix them as circumstances require. The skeleton of man contains more than two hundred separate pieces and the muscles about two hundred and twenty pairs."—*Quain and Wilson*.

Life and nutrition is given to these muscles by the organic nerves or nerves of nutrition—the motion and sensation from the spinal nerves.



MUSCLES OF THE FACE.—(*Lardner*.)

The various bands or muscles are here well delineated; notice the muscle round the lips to move the lips at pleasure. These muscles, it must be borne in mind, are acted upon by the will from the nervous centres in the base of the brain, through the telegraph wires, or nerves of motion and sensation in the spinal column.

"A stratum consisting of five or six muscles, (1, 2, 3, 4, 5,) of considerable surface, but little thickness, covers the entire surface of the head from the brows to



the back of the neck, called by anatomists, according to their local position, *occipital*, *frontal*, and *auricular*, the action of which is to move the scalp, with the hair, the ears, the integuments of the forehead and temples, and the brows. By their contraction, the eyebrows are drawn upwards, the skin of the forehead thrown into transverse folds and wrinkles, the scalp and hair moved backwards and forwards, and the features thereby made to express various and often opposite emotions, according to the greater or less extent to which the action of these muscles is called into play. Joy, surprise, astonishment, or ecstacy, are attended with, or expressed by, a certain elevation of the brows. The contractions and wrinkling of the forehead, and the approach of the brows to each other, involve the more violent class of emotions, such as anger, hatred, indignation, and menace.

The eyes and eyelids, with their appendages, are moved by not less than twelve pair of muscles, of which, however, one only, called the orbicular (6), is superficially visible. These govern the entire play of the eyeball and the eyelids, the flow and suppression of tears, and, in part, the gestures of the brow. They combine, therefore, with the muscles above mentioned in the expression of anger and menace, and also assume the gestures which express the very different and opposite sentiments of tenderness, love, grief, mental pleasure, and anguish.

The nose and nostrils are moved by six pair of muscles, three only of which (7, 8, 9,) are superficially apparent; and fifteen pairs are appropriated to the various motions of the lips, the chin, the cheeks, and the lower jaw.

It will be observed that one of the most voluminous muscles, called the *masseters* (12), is appropriated—aided by another, not apparent superficially—to the motion of the lower jaw; that motion being subject, in the act of mastication, to a greater amount of resistance than any other facial gesture.

The motions of the neck, and consequently of the head, are subject to the action of about forty pairs of muscles, of which a small number only are superficially visible. And some of those which appear in the figure do not belong exclusively to the neck, but are shared between it and the trunk.

Eight pair of muscles are more or less called into play to make the head incline forwards, among which is the long muscle (19) extending from the ear to the point where the clavicle (32,) is articulated with the sternum, or breast-bone; another, called the mylo-hyoidean, extending downwards from the jaw; and another, the digastric (21, 22,) extending from the inner extremity of the jaw on one side, and its outer extremity on the other, to the hyoid bone (23).

Seven pair of muscles are employed, together or separately, in inclining the head backwards, among which there appear in the figure the trapezius (20) and the splenius (28). Seven pair are engaged in inclining the head sideways, several of which are also those, such as (19) and (20), which incline the head backwards."

DR. HORNER, in "Three Letters addressed to a Non Medical Friend," gives a very plain account of the absorbent lymphatic system, which I quote. The letters were addressed to myself,—J. S.

"Allow me, in brief recapitulation, to bring again before you the principal circumstances and facts which are more fully given in the volume alluded to, (*On the Nature of the Water Cure.*) I again say, be not



impatient of repetitions, as long as they bring before you useful and important knowledge: it serves the purpose of riveting it more firmly in your mind.

"You remember that I stated that mastication of food is the commencing part of the process of digestion; and that due care should be taken to make it as perfect as possible. I alluded to the value of good teeth, and to the proper use of them in slow and careful mastication of food.

"Again, I pointed out the source, the use, and the solvent power of the saliva, or spittle, in its mixing with the food, and in preparing it for the further action of the gastric juice in the stomach.

"You recollect, dear Sir, that the food undergoes the first great change of its nature in the stomach, and *there* it becomes *chyme*, according to technical language. The word is Greek, and means a juice or fluid mass. It remains in the healthy stomach an average time of two or three hours, subjected to the specific action of that organ and its secretion, the much-talked-of *gastric juice*. When it is fitted for the next movement downwards, the *chymous mass* passes through the lower opening of the stomach called the pyloric orifice. We have here again a Greek word for the part, namely, *pyloros*, which means a *porter* or *doorkeeper*. The term is good, for no matter is allowed by it to pass forwards into the first bowel unless it be in a proper state for it. The *pyloros* or *pylorus* is usually very vigilant; that is, it is very sensitive. Indeed, it is endowed with an elective power suitable for its important office. Through this sensitive and elective power it will raise a commotion in the stomach, and cause vomiting, when anything of very improper nature presents itself for admission into the first bowel, called the *duodenum*. This term, I told you, is of Latin origin, and means *twelve*; because, say the anatomists, its length is about twelve inches.

"Respecting this elective power, or peculiar sensibility of the pyloric orifice of the stomach, I have to apprise you that it is frequently much deranged and destroyed by the intemperate use of stimulants; so that it loses its healthy condition, and then allows improper matters to pass into the small bowels, to interfere with their important function, and thus to cause unhealthy chyle. Frequently also, from the same cause of intemperance, especially in the use of undiluted spirits or dram-drinking, this pyloric orifice becomes the seat of incurable and fatal disease, namely, schirrus or cancer. Under this disease the sensibility is morbidly increased, and constant vomiting takes place as soon as the contents of the stomach reach it for admission into the duodenum. On examination of such cases after death, I have usually found the part ulcerated, but this does not always take place. Napoleon Bonaparte died of this disease; but he had an hereditary predisposition to it from his father, who also died of it. Napoleon had too much shrewdness, common sense, and love of life to stultify himself by those habits which so often cause cancer of the pyloric orifice of the stomach.

"When the alimentary mass has passed into the duodenum, it is called *chyle* by nearly all physiologists. This is also a Greek term,

meaning *juice*, or *sap*, or *fluid squeezed out*. I have ventured, on just grounds, I think, to continue the name of *chyme*, for reasons given in the other book. However, it does not much matter about the name. You must keep in mind, however, that the mass undergoes great change in the duodenum, where it meets and is mixed with two other fluid secretions of particular properties. One is the bile, which is brought from the liver by a duct or canal; the other fluid is the *pancreatic juice*, brought from the *pancreas* by another duct. Besides these two fluids or secretions, there is also the special fluid which is secreted or formed by the lining membrane of the duodenum, and which is of a very solvent nature.

"The alimentary mass soon passes onwards into the next part of the bowels, called the *jejunum*, a name given from the Latin, and meaning *fasting*, because the bowel is always empty on dissection, after death. The mass is next passed forwards into the *ilium*, the next and last of the small bowels. These are so called because of their comparatively small dimensions. In the two latter ones, the jejunum and ilium, is chiefly absorbed from the alimentary mass, the *milk-like* fluid to which alone I would apply the term *chyle*, and not to the whole mass from which it is taken, as do other physiologists. This chyle is absorbed by the absorbent vessels which in this place and office are denominated *lacteals*, because of their *milk-like* contents, which they absorb from the alimentary mass. I shall say more about these lacteals anon.

"Here we must leave the remaining mass, which takes its course downwards into the larger bowels called the cæcum, the colon, and the rectum. You must keep in mind that the soluble or fluid part of this alimentary mass is absorbed by veins into the blood; whilst the insoluble matter, chiefly, is passed onwards and downwards. This absorption is not, however, to the extent that some writers would have us to suppose. I would just remind you that the liquid part of the fæces, or excrementitious matter, is chiefly secreted from the blood on the internal surface of the large intestine called the colon, where the fæces are first formed.

"To return to the lacteals or lacteal absorbents. The chyle is the nutritious part of the alimentary mass, the essence of aliment. It is conveyed from the small intestines by these lacteals to a kind of oval-shaped bag, the reservoir of the chyle, and therefore called, in technical language, the *receptaculum chyli*. It rests on the front of the spine of the loins, and receives or is formed by the termination of the large trunks of these lacteals, and the trunk of the lymphatic absorbents of the lower extremities. In this reservoir or receptacle the chyle, and the lymph carried by the lymphatics, are mixed together. At its upper part it is formed into a large tube or duct, and then takes the name of *thoracic duct*, because its principal course is within the *thorax* or chest. It ultimately delivers its contents into the part of union between the left subclavian and the left jugular vein; and being mixed with the venous blood, it soon arrives at the right side of the heart; and then into the

lungs, to be there exposed to the assimilating influence of the oxygen of the atmospheric air inhaled.

"Let us glance at the effects of excessive eating on the human system, in another direction. I mean the excess of *nitrogenous* or *azotized* elements. When the supply of such food becomes much beyond the wants of the system for the renewal of the muscular, nervous, and cellular tissues, you must not suppose that it can, in any way, be stored up in solid flesh, in the manner that non-nitrogenous food causes fat to be stored up. You must bear in mind, that the increase of muscular substance depends on the exercise of the muscles. Certainly this increase cannot take place without a proportionate supply of plastic elements of food; but, do remember, that no degree of richness of blood, or amount of proteine plastic elements, can produce increase of muscular substance and muscular power. Remember, that any accumulation of such nutritive matter in the blood, can serve no purpose but that of evil, and to produce disease.

"We are constantly witnessing the fact, that those who indulge in what is called high living, as to quantity and quality of food, are proportionately liable to disease and death. Those organs of the body which can serve, in a limited degree, to relieve it of excessive fulness and richness of blood through their functions of excretion, become disordered and diseased from excitement and over-action; especially the liver and the kidneys, the liver excreting hydro-carbonaceous elements, and the kidneys those of a nitrogenous nature. Of the catalogue of evil consequences are to be reckoned rheumatism, gout, apoplexy, and palsy, and various inflammatory diseases; and life itself is placed on a slippery foundation. Thus, dear Sir, we too often see the advantages of riches insanely overbalanced by the things they are made to bring upon their possessors; whilst the sons and daughters of poverty and want have often the compensating blessings of health and long life. I need not tell you, that not one of a thousand of the latter class duly appreciates the advantages he enjoys: for it is more of necessity than of choice that he is in such relation to the means of them.

"The instrumentality or apparatus of the absorbent function has been termed *general*, and *special*. Blood-vessels and membranes are the general apparatus. The special apparatus consists in a certain system of vessels exclusively for the purpose: these are the lacteals, and the lymphatics; having also a certain system of glands in connection.

"The lacteal absorbents have been already mentioned by me, as the means of removing the nutrient part of the food from the small intestines to the thoracic duct, by which it is conveyed, mixed up with the lymph, to be mingled again with venous blood; and after due assimilation in the lungs, to constitute the nutrient part of arterial blood, for the purposes of nutrition. The lacteals are the special absorbents for their important office as noticed above, and they arise from the internal surface of the small intestines.

"I wish you to keep in mind, dear Sir, that the other special absorbents, the lymphatics, which carry a *water-like* fluid, and hence their

name of *lymphathics*, (*lympa* is a Latin word for water) are to be found in every tissue both of the internal and external parts of the body. The structure of both kinds of absorbents is very similar to that of the veins, which also act as absorbents, in addition to their office of carrying dark and impure carbonized blood. The coats of the veins, however, are thicker, and not so transparent as those of the lacteals and lymphatics. Here you have a view of an absorbent vessel in its internal and external surfaces.



A magnified view of an absorbent vessel. 1. Represents the external surface with the jointed appearance produced by the valves. 2. Represents the same vessel laid open, showing the arrangement of the valves.

“When these absorbents are fully distended by their contents they have a jointed appearance, as you see here. The point of each joint is caused by a pair of valves on the internal surface. Here, again, dear Sir, is sunbeam evidence of design. These valves are evidently for the purpose of preventing the reflux or backward motion of the fluid within. You recollect that the same means answers the same end in the structure of the veins, and especially in the large ones of the lower extremities. It is this which gives a knotted appearance to the veins of some people, who suffer from varicose legs.

*(The following engraving [B] shews the structure of the veins, with the provision to prevent the return of the blood in the same veins. It will be noticed that there is a perforation in the centre of the valve, and on the blood being forced back it presses on the sides, and closes the centre perforation.—J. S.)*



“Allow me to state to you further on this point, that the veins and absorbents have not, like the arteries, an impelling engine, as the heart, to force forwards their contents; therefore they need and have the auxiliary means of valves. The arteries have no valves, because they receive the impulse of the heart with which they are connected at their outset in the aorta. They have, besides, an inherent power of circulating their own contents, arterial blood, which is the oxygenized, nutritious, and scarlet coloured vital fluid.

“Doubtless, the lymphatic absorbents arise from every part of the body. I wish you to keep in mind that although, like veins, they anastomose with, or open into each other, they do not, like them, proceed from small to larger branches, and from these branches to form large trunks. The absorbents, remember, continue of about the same size in their whole length, from their origin to their termination. Re-



member, also, that the chief of these lymphatic vessels are arranged in two orders or sets; one of them is on the external surface of the body, the other is disposed in a deeper course, and more especially to accompany the large trunks of blood-vessels.

"It is of importance that you remember, that every lacteal and every lymphatic absorbent of the human body goes, in some part or other of its course, through the absorbent gland. These are called *conglomerate*, in contradistinction to others called *conglomerate* glands, which are made up of a congeries or collection of smaller ones; whereas, these are single or one in substance. I must apprise you, that the absorbent glands are small and usually oval-shaped bodies, and are enclosed in a membranous covering. I give a magnified view of them below.

"The glands of the lacteal absorbents, you recollect, are also called *mesenteric glands*, because they are located in the large and powerful membrane, the *mesentery*, which has its name from its principal office of retaining the intestines in their proper position. On page 355 I present you with a view of the absorbent glands of the lacteals with part of the small intestine, and the receptaculum chyli, with the thoracic duct, &c.

"The glands of the lymphatic absorbents are of various sizes, and are placed in certain appropriate parts of the body. They are sometimes single, but more frequently they are in groups or masses, as in the axillæ or arm-pits, and in the groins, at the bending of the knee, and under the jaw-bone. They readily enlarge from irritating causes. When an absorbent gland inflames and enlarges it is called a *bubo*, in professional language, which in Greek, means a *swelling*.

FIG. I.

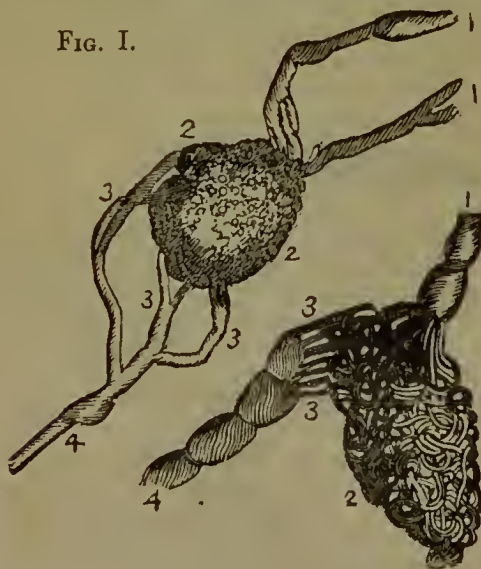


FIG. I.—1. Absorbent vessels called *vasa inferentia*, entering (2) the gland. 3. Absorbent vessels emerging from the gland, called *vasa efferentia*, and forming (4) a common trunk.

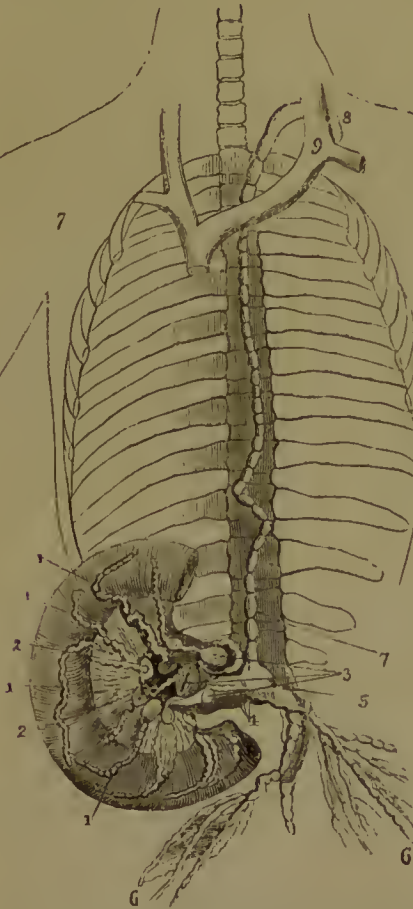
FIG. II.—1. Trunk of absorbent vessel entering a gland. 2. Gland apparently composed entirely of convoluted vessels. 3. Vessels emerging from the gland, and forming (4) a common trunk.

FIG. II.

FIG. III.



FIG. III.—Small lymphatic vessels passing their contents through a gland.



1. Lacteal vessels emerging from the mucous surface of the intestines.
2. First order of mesenteric glands.
3. 2nd. order of mesenteric glands.
4. The great trunks of the lacteals emerging from the mesenteric glands, & pouring their contents into (5) the receptacle of the chyle.
5. The great trunks of the lymphatic or general absorbent system terminating in the receptacle of the chyle.
6. The thoracic duct.
7. Termination of the thoracic duct at (9) the angle formed by the union of the internal jugular vein with the subclavian vein.
8. The thoracic duct.
9. The angle formed by the union of the internal jugular vein with the subclavian vein.

VIEW OF THE COURSE OF THE THORACIC DUCT, FROM ITS ORIGIN TO ITS TERMINATION.

"The absorbent vessels which enter a gland are termed *vasa inferentia*, or in-going vessels. These enter at the part of it most distant from the heart. Again, those which leave it are termed *vasa efferentia*, or out-going vessels, and are seen to emerge on the side next to the heart, and are fewer in number than those which enter it. The whole

substance of an absorbent gland appears to be made up of the *vasa inferentia* convoluted or rolled up on each other, and having free communication with each other.

"Although, as I have already stated, the absorbents have no impelling organ to send forwards their contents, yet the fluid they contain is known to move onwards with considerable force; and we reasonably suppose, therefore, that they possess a vital and inherent power for the purpose.

"Again I counsel you, dear Sir, to remember the particular facts and circumstances noticed by me in this brief account of the absorbent system; for, assuredly, the subject has a constant bearing on the health and disease of the human body; and for success of treatment the practitioner must understand and think of it. There are yet other and very interesting particulars which I must next bring before you. If I refer again to some things already mentioned, the repetition will serve, I say, to impress your mind more deeply on useful knowledge.

"Mark, then, in reference to the special office of the lacteals to absorb chyle from the alimentary mass in the small intestines, that they scarcely ever absorb any other fluid matter, to whatever extent it may be presented to them. These lacteals, then, are endowed with a *special sensibility* for their purpose, and which makes them refuse to take up anything but chyle. You may call it a *nervous power of election*. But this, dear Sir, is one instance of the like innumerable ones in the human system, where *special sensibility* belongs to organs and parts for their *special purposes*; and is, indeed, beyond the power of the greatest intellect to understand. It is a part of the wonderful endowments which are absorbed in the animal economy; but no more is known of them. They are truly of the greatest moment for health, and for life itself. I shall again meet with this subject in pursuing our principal ones of health, and disease, and its treatment; and I think that I shall have the opportunity of giving you further illustration of it.

"The lymphatics which are distributed over the whole human frame, are not limited to the absorption of a certain fluid, as the lacteals are. The lymphatics absorb matters of various kinds, but it is always of an organized nature, and passing through its stages of purification or fitness for the purposes of life. It was formerly believed that the contents of lymphatics were of a refuse nature, but this is now found to be erroneous.

"The absorbent glands are supposed to exert a certain influence on the fluids which flow through them in the absorbent vessels, and to assimilate those fluids more nearly to the nature of the blood. That they do exert a power of altering the nature of such fluids is supported by the fact that the injection of even bland fluids directly into the blood, without their passage through these glands, is often of most serious consequence: even fatal effects have followed.

"There are two organic functions of the human body, of which I have not written to you, dear Sir. They are ever in intimate relation with the chief subjects of these letters. In meeting with the names of these

two processes non-medical readers are frequently puzzled to understand their true nature and different uses. I allude to secretion and excretion. I can only undertake, in my limited space, to make a few brief remarks concerning them, yet it will suffice for the end in view.

"The word *secretion* is from the Latin word *secreno*, to separate, to sever, to put asunder or apart. The entire matter of the human body is literally secreted or formed from the blood, which is formed from food, with the aid of air, water, heat, electricity, and light. These things have been repeatedly explained to you. But the term *secretion* is used in a more special sense, and is applied to certain matters, both fluid and solid, which are secreted or formed by certain parts of the body, called *secreting organs* or *instruments*. The principal ones are glands of various sizes, and for various purposes; and serous and mucous membranes also form extensive secreting surfaces, which perform functions of great importance for the health and wellbeing of the animal economy,

"I must not forget to tell you that the word secretion was first used on the erroneous supposition that it was literally, and only a separation of different matters from the blood, in which they existed. The truth is, that they are formed or elaborated out of its constituent elements. The liver secretes, or elaborates, or forms bile from the carbonized and impure venous blood, which is carried through it for the purpose. Again, the breasts of the mother secrete or elaborate milk from the nutritious arterial blood circulating through them for the purpose. The stomach, by the apparatus on its lining membrane, secretes the gastric juice. The kidneys secrete urine. The salivary glands in and around the mouth secrete saliva. The wax of the ear is secreted by a suitable apparatus on its internal surface.

"You must keep in mind that all matters, fluid and solid, which are produced to serve some useful purpose in the human body, are the products of secretion. And mark you, all matters, which are separated from the body to be removed as useless or noxious, are also the products of secretion. But they are called *excretions*, because they are separated from the organized substance of the body by similar processes, for the purpose of their removal from the system. Excretion is a particular form of secretion. The distinguishing difference between the two processes is, that in excretion the matter separated is either noxious or useless, and must be removed from the body. The matter separated by secretion has to serve some useful purpose in the body.

"I cannot explain to you the real nature or mode of performance of secretion; for, like that of many others of the animal system, it is unknown. It is certainly performed by the joint means of arteries, veins, nerves, and absorbents. The chief agency is, doubtless, that of the *nervous power*, and may be of a modified kind for the purpose. Membranes become the seat of secretion, and we see a great variety of its products. The membranes which line the large and closed cavities of the human body are termed *serous membranes*, because the fluid which they secrete, and which preserves their proper and moistened condition, is *serum*. I mean the cavities of the chest and of the abdomen.



“Again, there is the *synovial membrane*, which lines the interior surface of the joints, and secretes *synovia*, a glairy fluid which is useful and necessary for locomotion.

“Then, you must consider the most extensive membrane of the body, which is called the *mucous membrane*. It lines the open cavities and canals of the body—the mouth, the stomach, and intestines: also the air passages, and the lungs. This mucous membrane secretes mucus, which adheres to its surface, and keeps it in a suitable state of moisture.

“An Italian physiologist called Malpighi, and another called Ruysch, who flourished at Amsterdam at the same time, and Muller of Berlin, all these narrowly investigated the minute structure of the secreting apparatus, and formed certain doctrines on the nature and uses of secreting sacs, and follicles, and tubes: but they differed in their opinions. Nevertheless, it is established now, that follicles, cells, and tubes, constitute the principal apparatus of secretion, with some variety of arrangement of the same.

“Sometimes the apparatus or means of secretion consists in simply extended membrane: and a fine network of minute or capillary arteries, nerves, and absorbents, is stretched over its secreting surface; and by the specific action of these the matter secreted is separated from the blood.

“Yet you are to keep in mind, that there are the other forms of apparatus for the purpose; namely, *cryptæ*, or small pits; follicles, or small bags; *cæca*, or small pouches; *tubuli*, or small tubes; which also serve for retaining the matter for a while, to be supplied according to the wants of the system.

“When these *cryptæ*, follicles, *cæca*, and *tubuli* are collected into close contact, and have their necessary arteries and nerves inclosed with them in a common membrane, and as one mass, they constitute a secreting gland. You are to consider a secreting gland as a collection of these secreting bodies connected by cellular tissue, and enveloped in a common membranous covering, and thus forming a distinct organ of secretion. Such are the liver, the pancreas, the spleen, and the kidneys.

“There are very many interesting particulars in connection with the present subject; but my limited space allows not of further particularisation. I must not leave it, however, without some notice to you of the extent of secreting apparatus. Think, that wherever nutrition is carried on, there, also, is secretion and its apparatus. The extent cannot be correctly stated. All the internal surfaces are studded with secreting bodies. The skin is covered with them, for the secretion of insensible perspiration; also for that of the oily matter which gives to it its softness. Again, the hairs are produced by a secreting process. But further, think of the great organs of the body, the liver, the lungs, the pancreas, and spleen: also the brain. Again, think of the organs of the senses, the eyes, the nose, the tongue, and the ears: nay, every point of the body, and even the bones, have innumerable organs of secretion.

"I wish you, dear Sir, ever to keep in mind, that the great and indispensable agent in this process or function of secretion is *organic nervous power*; this is undoubted. Just in familiar illustration of the fact, let me call your attention to what you are already aware of. You know that the sight, and even the thought itself, of agreeable food, fills the mouth with a secretion of saliva; in common parlance, it *makes the mouth water*. Again, music or agreeable society at dinner, or other meal, increases the appetite, and favours digestion. You well know, and I well know from experience, that disagreeables of any kind, affecting the mind through the brain and nerves of animal life, and through these, the nerves of organic life, destroy the appetite of the most hungry man: the secretion of gastric juice is excited by the causes of agreeable kind, whilst it is arrested by the contrary.

"Again, you well know that grief causes a flow of tears, in other words, it causes an increased secretion of tears by the lachrymal glands. Fear will cause an increased secretion of urine. But, above all, how often have I known the fine maternal feelings which bind woman's heart to her offspring, called into active exercise by the cry of her child! That cry, or the sight of her child, will at once fill her breasts with milk. Nay, it is a well-known fact, that the woman of strong maternal feelings has had the secretion of milk produced by an infant's cry when she has heard it in after years, and long past her own period of child-bearing.

"The imagination can effect secretion. Dr. S. Smith mentions the case of a female who had a great aversion to calomel. She was taking it in minute doses, unknown to herself. She was told of it, and was immediately salivated. On being persuaded that she had not taken any, the salivation ceased. Again she was told that she was taking it, the salivary glands were again excited to excessive action and salivation. In proof that it was purely the work of imagination, there was no redness of the gums or swelling of them, which always is the case in the action of calomel.

"Allow me, dear Sir, to conclude this very interesting subject of secretion, to which your earnest letters have led me, by a few remarks on another point which crosses my mind regarding it. I cannot give you any satisfactory explanation of it: but, how is it that from the same vital fluid, the blood, the same kind of secreting apparatus produces the secreted matters according to the specific purposes to be served by them; and produced, too, by the same nervous power? How is it, I mean, that the breasts of the mother secrete the bland and nutritious fluid called milk, which is so suitable for infancy, and not another fluid? How is it that the liver secretes bile, and not urine? or how that the kidneys secrete urine and not bile, and so on? These are of the many *arcana*, the secret things of animal organization, which no human mind will ever penetrate. However, in reply to such questions, we may point to a difference of structure or texture of those several organs of secretion. Nevertheless, there is a cause which is, doubtless, beyond the ken of man. We see enough, however, to fill us with adoring ad-

miration of that wisdom which is infinite, and of that design and beneficent care which incessantly provides for the well-being of man.

"We must now take a very brief consideration of the other function, namely *excretion*. I have already informed you that this is only a particular form of *secretion*. Different matters contained by organized bodies, vegetable and animal, are continually thrown off by them to enter into other combinations, and to constitute part of the matter of the external world around us. Such rejected matters of the human body are called *excretions*. The function for the purpose is that of *excretion*.

"I must aim at the strictest brevity in treating of this form of secretion. I keep before my mind's eye the essential points in closest connection with the chief subjects of these letters on health, disease, and its treatment. I aim at a statement of such things as bear most for illustrating these to your non-medical mind.

"There are five organs, dear Sir, belonging to the human body, which may be said to be decidedly excretory in their functions; that is, which serve the purpose of separating those matters which are termed excrementitious, and which are useless, and which become noxious to the body if they be retained beyond a due time. These organs are the intestines, the kidneys, the lungs, the liver, and the skin. You know quite well that they have other purposes to serve besides; yet this one of *excretion*, for the removal of improper matters from the body, becomes an important one.

"I need not describe to you the minute anatomy of the skin; but really, I cannot easily over-rate the importance of its different functions, and more particularly of those of *excretion*, for which its structure is well adapted. I just remind you here, that it is composed of three layers or coats—the internal one is called the *cutis vera*, or true skin, of which I have already treated. The middle layer is called the *rete mucosum*, or mucous network; and it is most conspicuous in the negro, in whom it becomes the seat of colour. On the external surface of the *cutis* there is a particular and complex network of blood-vessels, nerves, and absorbents. These nerves are of both kinds, both *organic* and *animal*, that is, both *insentient* and *sentient* nerves. The *organic nerves* give power to the arteries to perform their part in the functions of the skin, and these are chiefly of an excrementitious nature. The supply of *animal nerves* to this *vascular plexus* of the skin gives to it its fine sensibility.

"I mentioned to you before that the softness of the skin is owing to the oily matter which *sebaceous glands* secrete for the purpose; and on this oily substance depends the peculiar odour of the animal body. This odour becomes variously strong, and very peculiar, in certain states of the nervous system. I have known it more particularly affected in the *insane*.

"But, dear Sir, there are certain grounds for supposing that this odour may be various in its quality, beyond our power of conception. I am thinking of the dog, the faithful but often ill-requited companion

and friend of man. You know that he at once distinguishes the odour of his beloved master amid the crowd of thousands. He distinguishes by his nose where is the footstep of his master, be it in the crowded city or on the public road.

"I wish you especially to keep in mind that the skin is highly furnished with blood-vessels and nerves, and that it performs most important functions. It performs at least four; three of which are *organic*, and one is *animal*: namely, secretion, excretion, absorption, and sensation. The last mentioned is the one *animal* function which the skin performs, and which serves, as you know, most necessary purposes.

"The principal excretion of the skin is that of the *perspiration*. This is both *sensible* and *insensible*. The former is commonly called *sweat*, the latter is invisible; but it is constantly going on, so that a great amount of matter passes, in this way, out of the human body every day. You are aware that the sweat, or visible perspiration, is the great means of regulating the heat of the body when it is exposed to a high temperature, especially in tropical climates, and in the hot summer weather of our country. The evaporation of the fluid perspired is a cooling process.

"You must not forget that *carbon* is constantly separated or excreted by the skin from the blood; and thus, you perceive, that in this action it aids the lungs in their great process of depuration or decarbonization. Remember, however, that another great office of the skin is to relieve the blood of its excess of water, of which hydrogen is the chief element. You see, then, that the three great organs for depurating the blood of carbon and hydrogen are, the lungs, the liver, and the skin. They are closely connected in function, so that, under certain circumstances of climate and habits they become vicarious, that is, they act for each other.

"Let me fix your attention on the extent and importance of the functions of the skin: and especially on the great fact that this extensive organ of four functions is the very appropriate field of operation for the *water cure*. No wonder that this has proved the most efficacious of all curative means ever practised against the diseases of the human body.

"Were it not that the history of the arts and sciences affords so much, and too much evidence of the unreasonableness of mankind in rejecting and denying the value of the best of discoveries, and which afterwards became of the highest worth and greatest service to the world, one would scarcely credit that the water cure could meet with so much indifference and opposition from educated and professional men.

"As to the excretory function of the lungs, you are already aware of it from your perusal of my other treatise "*On the nature of the Water Cure*." Be not impatient of repetition; I will briefly recapitulate. The lungs, you are aware, are the chief decarbonizing organ of the body. The venous blood, with which are commingled the chyle and lymph, is the carbonized and impure blood which enters the right side of the heart, and by it is sent to the lungs, where the process of decarboniza-



tion takes place, through contact with the oxygen of the air inhaled. It is returned from the lungs to the left side of the heart in the character of *arterial, oxygenized, and vital blood*. It is then sent, by it into all parts of the body.

"There are some particulars of great interest connected with this process, which have been proved by the experiments of Dr. Stevens, now of Malvern. I must not enter into an account of them. However, one of the ascertained facts which have been published, is, that there exists a strong attraction between oxygen and carbonic acid, whatever may be that between it and carbon. In my next letter I shall have to make further mention of Dr. Stevens and his discoveries, in connection with the nature and treatment of cholera; at present, therefore, I abstain from a longer statement.

"I have already mentioned to you the *elective power* of the lacteals. The matters which had been rejected by these lacteals are taken up by the veins and absorbents of the adjoining parts, and are conveyed into the blood which goes by the *vena portæ* to the liver. Now, by the appropriate function of the liver these matters undergo a further and perfect digestion. After this, they are conveyed by a short course to the heart, and thence to the lungs for their assimilation to the nature of arterial blood.

"The liver is an organ of excretion, as you now see, for the substances called carbon and hydrogen, the chief constituents of bile; and they are highly excrementitious; and the more copious the quantity of bile secreted, the larger the amount of carbon and hydrogen taken from the venous blood. Thus, as stated before, the liver is greatly auxiliary to the lungs and the skin in their work of *excretion*, and of necessary depuration of the vital fluid, the blood.

"I have next and only just to notice to you the excretory functions of the kidneys. They have nothing to do with the excretions of the liver, the lungs, and the skin, as far as *carbon* is concerned. The kidneys, you know, secrete the urine. According to the various circumstances of the human system does the quality of this secretion vary in its composition. The special office of the kidneys is to eliminate or extract the highly animal substance called *azote* or *nitrogen*. This, you know, is an elementary ingredient, and a principal substance of their excretion from the body, but not the only one. They have, indeed, a certain relation in their function to that of the skin, in the *watery fluid* which forms so large a part of the urine, and this is always in the inverse proportion of the quantity taken from the system by perspiration of the skin.

"Many different kinds of salts and other matters are to be found in the urine by chemical analysis; but I need not mention them here. The chief matter which characterizes its composition is called *urea*, which is of a highly animalized nature, and the constant excretion of which cannot be interrupted for any length of time without the most injurious and even fatal results.

"The function of the kidneys appears to be the occasional outlet for

whatever is not needed in the animal system ; and whatever is not of a suitable quality for a passage by the other organs of excretion, or does not find its usual and proper outlet. Often does the bile pass in the urine when the usual passage by the bowels is stopped by disease. The special matter of extraction, I repeat, is *urea* as a proximate principle, and the special elementary substance is *nitrogen* or *azote*.

"We will now, dear Sir, briefly consider the object or purpose which is served in the human body by the function of *excretion*. It is soon stated. You are aware that the grand source from which are derived the materials of the body's composition, is the blood. It becomes a matter of great moment that this vital fluid be preserved in a state of purity, and adapted for the great purpose of supply of the various tissues, and for the purposes of life and organization. A wrong condition of the blood, by the retention of any matters which ought to be continually removed, becomes rapidly injurious and even fatal to life.

"*Excretion* is the great depurating process of the blood. Firstly, that of the lungs cannot be at all suspended without the worst consequences, which are immediately experienced. The carbon of the venous blood, which ought to be extracted by its combination with oxygen of the atmospheric air inhaled, quickly accumulates, and mixes with the arterial blood. In a minute or two the arterial blood becomes venous, and being carried to the brain, sensibility is first destroyed ; then the heart ceases to act, and death ensues. Such is the case in death by hanging, and drowning, and all similar means by which the function of respiration and decarbonization is interrupted.

"If the proper excretion of bile by the liver be stopped, it soon accumulates in the blood, and its deadly properties are experienced in the extreme depression of nervous power. If the usual excretion be not soon re-established, insensibility and death will supervene.

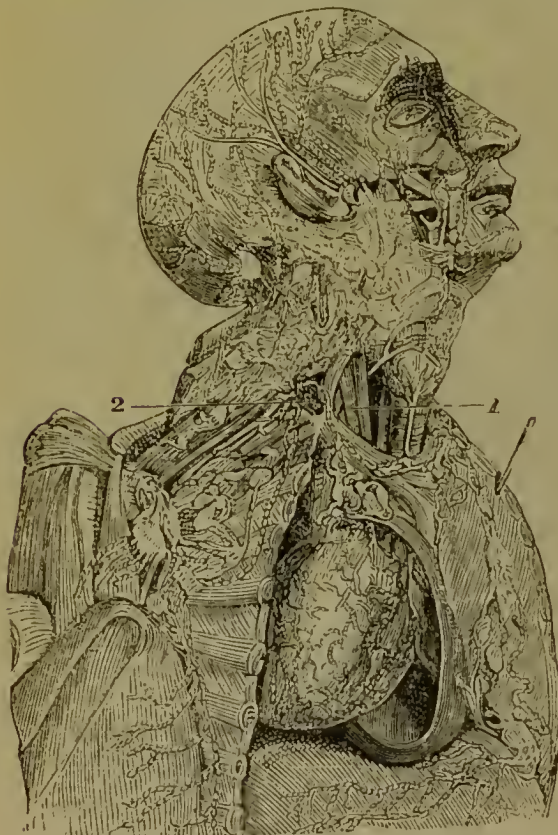
"I have next to apprise you, that if the excretion of *urea* by the function of the kidneys be interrupted for a short time, the blood is thereby rendered putrescent ; and very soon the most malignant fever destroys the individual ; coma, or stupor, and death are the result of its retention in the vital fluid. This is occasionally seen in the course of certain diseases, and becomes the cause of their fatal termination.

"Further, in regard to the excretion of the skin. You are aware that the internal and external covering of the body, that is, the skin and the mucous membrane of the mouth and intestinal canal, are identical in structure and character : and that the whole difference of their appearance is owing to their difference of position. Hence the close sympathy between them. When the excretion of the skin is suppressed, the internal organs suffer immediately.

"As to the excretions of the intestinal canal, and the very injurious effects of their suppression, I need not inform you. Such is the importance of a constant and due action of the bowels, that purgatives become a chief means of drug medication ; and when judiciously administered, they are decidedly the most effectual.

"When the function of excretion, by the different organs for the

purpose, is duly performed, all is well with the human body. The blood continues pure and healthful in its influence on every organ, and is suitable for the great purposes of life. When all is healthful and well with the body, and only then, does it become the suitable tenement, and the efficient organ of the soul; to obey its high behests, and to answer its great purpose of devotedness to the service of the infinite and adorable Creator. Do remember the imperative necessity of preserving the health and vigour of your body, if you wish fully to enjoy the only happiness to be found on earth, the happiness of a life devoted to the glory of God."—*End of Letter 1st.*)



**SOURCES OF LYMPH.**—The liquid part of the blood, called the *liquor sanguinis*, or *plasma*, charged with nutritive principles, exudes by the process of *exosmose* through the coats of the capillaries, and being diffused among the tissues, supplies to them respectively the matters proper for their repair. The residuum of the plasma is absorbed by the multitude of lymphatics which pass through the same parts, into which it enters by the process of *endosmose*. In this state it constitutes lymph, and is carried back by the lymphatic vessels to the subclavian veins. — (*Dr. Lardner.*)

#### LYMPHATICS OF THE UPPER PART OF THE TRUNK AND HEAD.

**STRUCTURE OF THE LYMPHATIC GLANDS.**—It was formerly supposed that in passing through the glands, the lymphatics entered into direct communication with the blood-vessels. The researches of modern physiologists have proved this to be an error. A lymphatic gland consists of a mass of minute lymphatic vessels, among which numerous sanguiferous capillaries (blood vessels) ramify. Between the two sets of vessels there is no innervation. They conduct their respective fluids alto-



gether independently of each other. The lymph which passes into the gland by the afferent vessels, passes out of it by the efferent ones, having in the gland been infinitely subdivided by the minute and multiplied tubes which form the substance of the gland. Whether there is any interchange between the blood of the capillaries in the gland by exudation or exosmose and the lymph of the smaller lymphatic vessels, is mere matter of conjecture, unsupported as yet by any results of immediate observation.



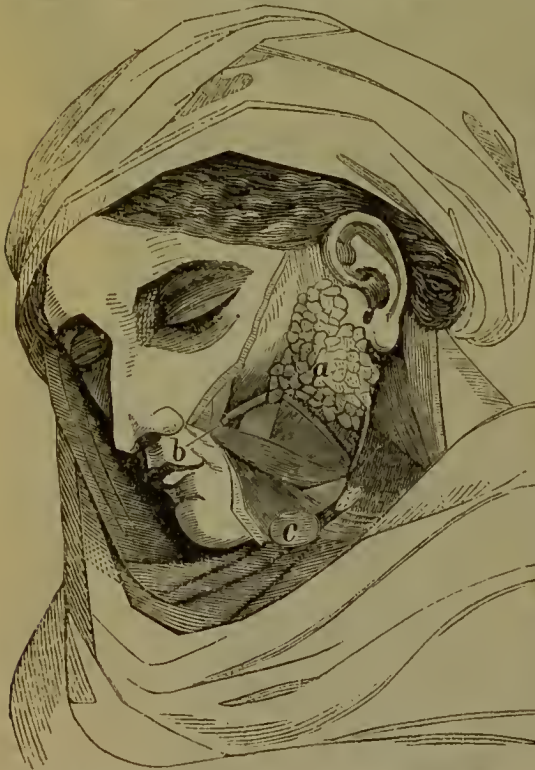
ABSORBENTS AND LYMPHATICS.—(From Quain and Wilson.)

Nos. 1, 1. The under surface of the liver. 2. The gall bladder. 3. The ductus communis choledochus. 4. The portal vein. 5. The hepatic artery. 6. The descending portion of the



duodenum. 7. The pancreas. 8. The lower part of the spleen projecting below the great end of the stomach. 9. The stomach. 10. The superior mesenteric artery and vein, resting upon the transverse portion of the duodenum. 11. The ascending colon. 12. The mesentery. 13. The small intestines. 14. The layer of peritoneum which connects the descending colon to the posterior wall of the abdomen. 15. The descending colon. 16. The sigmoid flexure. 17. The rectum.

a. A group of lymphatics from the right lobe of the liver, passing to its posterior border to terminate in the commencement of the thoracic duct. b, b. A second group from the gall-bladder and middle portion of the liver, proceeding along the course of the hepatic vessels between the layers of the lesser omentum. c. One or two lymphatic trunks passing to the upper surface of the liver. d, d. Lymphatics from the left lobe passing to the coronary glands, e, e. f, f. Lymphatics from the stomach converging to the group of glands, g, g, placed along the concave border of the organ. h, h. Lymphatics converging to the glands on convex border of the stomach. i. Lymphatics from the great end of the stomach descending to the splenic glands. k, k. Pancreatic lymphatic vessels. l, l. Lacteal vessels originating upon the surface of the small intestine, and converging to the root of the mesentery. m, m. Mesenteric glands. n, n. Lymphatic vessels from the ascending colon, terminating in glands along its fixed border. o, o. Lymphatics and glands from the descending colon, converging towards the vertebral column and root of the mesentery.



a, the salivary gland in the cheek; b, the duct leading to the mouth; c, the gland under the edge of the under jaw.

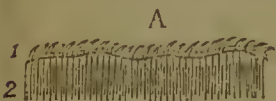
desire, will also cause an increased secretion and flow of saliva.—Graham.

**FORMATION OF SALIVA FOR THE MOUTH.**—In the oral cavity, on each side, near the second double tooth in the upper jaw, the mucous membrane forms a little tube (b), which ascends along the cheek, and branches out and forms a gland in front of the lower part of the ear (a). Another smaller one of these glands lies just within the lower edge of the under jaw, on each side (c); and a third and still smaller pair lie under the roots of the tongue, uniting on the middle line. The ducts of these last two pairs open into the mouth in front of the roots of the tongue and near its bridle. These are called the salivary glands. They secrete the saliva or the solvent fluid of the mouth, and pour it into the oral cavity freely during the process of mastication, and whenever any exciting substance is taken into the mouth. The smell, and sight, and even the thoughts of savory or disgusting substances, and of other objects of

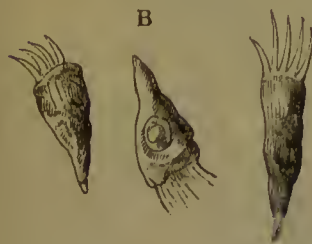
The absorbing vessels, considered as a system or whole, are divisible into two sets: 1, those which return the chyle from the alimentary canal; and 2, those which take up the lymph or residue of nutrition from all the other parts of the body: both are connected in their course with ganglia or glands. The chyle

vessels, by their union, form a large trunk (thoracic duct), which is a common reservoir for receiving their contents, as well as those of the lymphatics, which come—from both the lower extremities,—from the cavity of the abdomen and its viscera, except the right lobe of the liver,—from the walls of the abdomen at both sides, and from the surface of the left side of the thorax,—from the left lung, the left side of the heart, and left side of the diaphragm,—from the left upper extremity, and from the corresponding side of the head and neck. But the lymphatic vessels which arise from the right upper extremity, the right side of the head and neck, from the right lung, and from the corresponding half of the liver and diaphragm, pour their contents, by a short trunk, into the conflux of the right subclavian and internal jugular veins. This vessel may be called the right lymphatic duct; it is commonly named the right thoracic duct, though no part of it lies within that cavity. The duct of the left side is not entirely thoracic; for its commencement is in the abdomen, and its termination in the neck.

**CILIATED EPITHELIUM**, p. 81.—(*From Kirke and White.*)—This consists in the incessant vibration of fine, pellucid, blunt processes, about one-thousandth of an inch long, termed cilia, situated on the free extremities of the cells of epithelium covering certain surfaces of the body.



The form of epithelium on which cilia occur is most commonly of the cylindrical kind; but sometimes, as on the surface lining the cerebral ventricles, it is of the tessellated variety.



A. Cilia, as seen vibrating on a portion of the mucous membrane of the trachea of a rabbit; 1, the cilia; 2, lines indicating the several epithelial cells on which the cilia are placed. After Valentin. B. Separate cylinders of epithelium with cilia attached, from the trachea of the cat. After Henle.

the female generative apparatus. commencing about the neck of the uterus, extending along the Fallopian tubes to their fimbriated extremities, and continued for a short distance along the peritoneal surface of the tubes; and in the male it occurs in the epididymis.

If a portion of ciliary mucous membrane from a living or recently dead animal be moistened, and examined with a microscope, the cilia are observed to be in constant motion, either whirling round their fixed extremities so that their ends describe circles, or waving continually backwards and forwards, and alternately rising and falling with a lashing or fanning movement. During the lashing movements each of the cilia performs a motion somewhat similar to that per-

In man, and probably in Mammalia generally, the ciliary epithelium lines the interior of the nasal cavity, except the olfactory region, and of the frontal and other sinuses communicating with it, the lachrymal canal and sac, and is spread over the mucous surface of both eyelids, but not over the conjunctiva covering the eye itself. From the posterior part of the nasal cavity, it passes to the upper part of the pharynx, which it lines to about opposite the lower border of the atlas: it is also spread over the upper surface of the soft palate, and laterally is continued to the orifice of the Eustachian tube, through which canal it extends into the cavity and membrane of the tympanum. Ciliary epithelium occurs also over the whole extent of the respiratory mucous tract, commencing at the larynx, and ceasing only near the terminations of the bronchi. It is met with also in

formed during the feathering of an oar in rowing: hence the general result of their movements is to produce a continuous current in a determinate direction; and this direction is invariably the same on the same surface, being usually towards its external orifice. In the production of such current probably consists the principal use of the cilia, which are thus enabled to propel the fluids or minute particles which come within the range of their influence, and to aid in their expulsion from the body.

In the frog, triton, and probably most or all other naked Amphibia, the epithelium at and just within the neck or commencing dilatation of the Malpighian capsule (*in the kidneys*) is ciliated. This fact is, perhaps, connected with the peculiar arrangement of the seminal tubes or branches of the vasa deferentia, which open into one end of the Malpighian capsules, while the urine-tubes open into the others. The cilia work towards the seminal tubes, and would prevent the seminal fluid from mingling with the urine.

**SPASMODIC ASTHMA.**—(*Kirke and White.*)—The muscular action in the lungs, morbidly excited, is probably the chief cause of the phenomena of spasmodic asthma. It may be demonstrated by galvanizing the lungs shortly after taking them from the body: under such a stimulus they contract so as to lift up water placed in a tube introduced into the trachea (C. J. B. Williams, exxxi. p. 588); and Volkmann (xv. art. *Nervenphysiologie*, p. 586), has shewn that they may be made to contract by stimulating their nerves. He tied a glass tube, drawn fine at one end, into the trachea of a beheaded animal, and when the small end was turned to the flame of a candle, he galvanized the pneumogastric trunk: each time he did so, the flame was blown, and once it was blown out.

*From Dr. Budd on the Diseases of the Liver.*

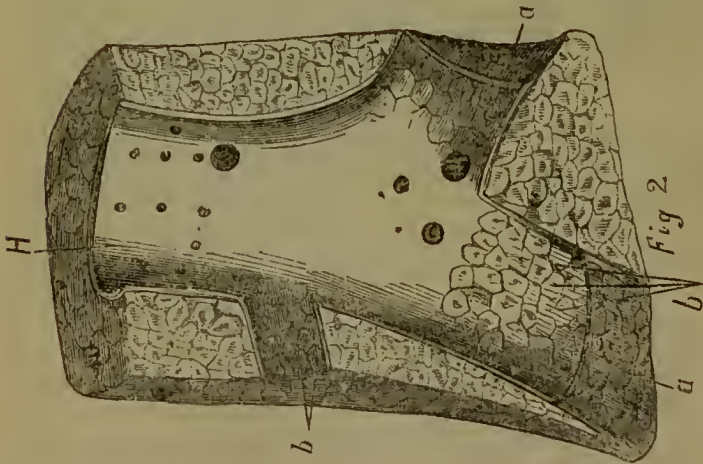
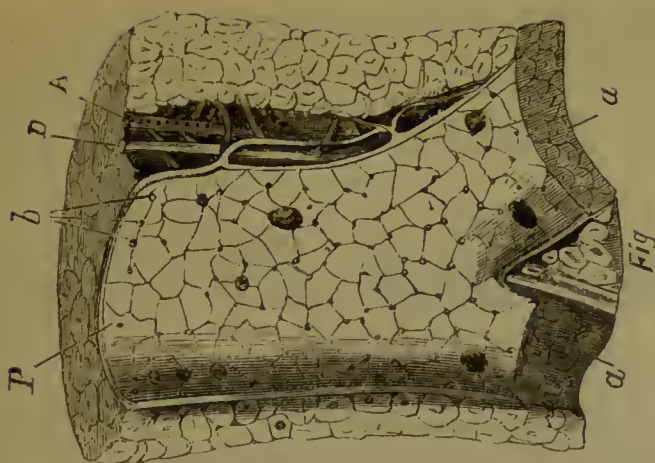


Fig 2  
H, longitudinal section of an hepatic vein; a a, portions of the canal, from which the vein has been removed; b b, orifices of ultimate twigs of the vein, formed by the capillaries of single lobules.



Longitudinal section of a small portal vein and canal. *P*, the portal vein; *A*, the accompanying artery and duct; *a*, portions of the canal from which the vein has been removed; *b*, orifices of ultimate twigs of the vein springing immediately from it.



Nucleated cells of the liver; *a*, the nucleus; *b*, the nucleolus; *c*, fat-globules; *d*, cells of small size, detached.



Nucleated cells of the gall-bladder, as seen under a high power; *a*, pavement formed by the union and apposition of the cells; *b*, side-view of four cells; *c*, the basement-membrane; *d*, a detached cell.

It is not in the liver only that the cells perform this office, for it seems established as a general law, that all true secretion, whether in animals or in plants, is effected by the agency of cells; that, "however complex the structure of the secreting organ, these nucleated cells are its really operative part." In each secreting organ, the secreting cells have a peculiar power to form, or to withdraw from the blood, the secretion proper to the part.

On examining these cells of the liver under the microscope, it is seen that most of them inclose small spheroidal globules, which are recognised by their dark outline, or high refractive power, to be globules of oil or fat.



In ordinary livers these oil or fat globules are small, and few in number; but in the fatty condition of the liver so often found in persons dead of consumption, and in that induced by keeping animals exclusively on fatty substances, they are so large and numerous as to distend the cells to double their natural size, and consequently to cause a great increase in the volume of the liver. The cells at the circumference of the lobule usually contain a larger amount of oil than the cells near its centre.



Nucleated cells, from a liver in a state of fatty degeneration: *a*, nucleus; *b*, nucleolus; *c c c c*, fatty globules. (Bowman.)

The mass of the liver is, as we have seen, made up of a plexus of capillary bloodvessels, the meshes of which are filled with nucleated cells containing the peculiar principles of the biliary secretion.

The liver in spirit-drinkers is often rendered hard, and tough, and granular, by the contraction and induration of coagulable lymph, deposited, in consequence of inflammation, in the areolar tissue in the portal canals.

When the stomach and duodenum are empty, part only of the bile flows along the common duct into the duodenum; the remainder passes down the cystic duct into the gall-bladder.

During digestion, on the contrary, the gall-bladder contracts, and part of the bile accumulated in it, together with all which is brought by the hepatic duct, is poured into the duodenum.

Very extensive structural changes in the liver—in the fatty liver, the gin-drinker's liver, the scrofulous liver—may exist without jaundice; and that in those cases in which jaundice results from permanent closure of the common duct, the jaundice sometimes lessens after the lapse of many months, and when the secreting cells of the liver are almost entirely destroyed.

The sugar passing out of the liver by the veins and lymphatics at once enters the general current of blood, and is rapidly transformed. In a healthy animal the quantity that enters the blood in the intervals of digestion is all transformed in the lung, so that not a trace of it can be found in the arterial blood. During digestion, when its quantity increases, some of the sugar may escape transformation in the lung, and be sent in the arterial blood to every part of the body; but it is not then found in the urine or other secretions, and must therefore be transformed in the blood. It is only when the secretion is so increased as to constitute disease that the sugar passes off in the urine, and the *diabetic* state is produced. What precise transformation the sugar undergoes in the blood is still uncertain. From some experiments made to determine this point, Bernard concludes that its transformation is not effected by the immediate influence of oxygen—that the sugar is not *burnt* in the lung, and exhaled as carbonic acid—and that it must undergo transformation by the lactic, or some other fermentative process.

The most remarkable results which Bernard has arrived at are those which relate to the influence of the nervous system in controlling and modifying the secretion of sugar.

The principal of these results are the following:—

1st. That division of the pneumogastric nerves in the neck arrests the formation of sugar. If this operation be performed on a dog, and the animal be killed three days after, not a trace of sugar can be found in the blood of the hepatic vein or in the substance of the liver itself.

2nd. A second result, which, on its first announcement, was very startling, is, that in all animals in which he could perform the experiment (dogs, rabbits, guinea-pigs), lacerating the floor of the fourth ventricle of the brain between the auditory nerves and the par vagum increases the formation of sugar to such a degree that a large quantity of sugar passes off in the urine, and the creature is rendered diabetic. The diabetic state continues some days, until the injury is repaired, after which sugar can no longer be found in the urine. Bernard states that the experiment which led to this singular result was suggested by his having noticed, in making experiments with another purpose, that pricking the pons varolii at the origin of the fifth nerve caused an abundant secretion of tears and saliva. He further found that irritation of the floor of the fourth ventricle of the brain increases the secretion of sugar in the liver when the par vagum has been divided in the neck—showing that the nervous influence exciting the secretion is transmitted to the liver, not down the pneumogastric nerves, but down the spinal marrow. This last conclusion was confirmed by another result, that division of the spinal marrow below the brachial enlargement puts a stop in all cases to the production of sugar.

Bernard hence infers that the nervous influence that ordinarily excites the secretion of sugar is a *reflex* influence—that it passes up the pneumogastric nerves to the nervous centre (medulla oblongata or brain), and thence down the spinal marrow, and along the spinal nerves and the branches of the great sympathetic communicating with them, to the liver.

Dr. Budd shews the connexion betwixt the liver and the lungs. When we breathe the pure air, and in sufficient quantity, the lungs perform their natural office in taking in oxygen, which consumes the carbon or waste matter perfectly; if we take little out-door exercise, or breathe impure air (and which is also deficient in oxygen), the carbon is not consumed, and the useless and offensive matter remains in the system, doing mischief, except so far as the liver can take up the office of the lungs. The body is so constructed that other organs will temporally assist any weak organ, or counteract the over work or deficient nutriment of another; but if this strain is continued, the assisting organs are overtaxed, and the inactive organ becomes weaker from want of use. So sedentary and indolent persons throw on the liver part of the work of the lungs, and become chronic dyspeptics.

“Andral, and many other writers, have remarked that congestion of the liver from impeded circulation through the lungs, when long continued, often leads to organic disease; and they have thus accounted for the frequent association of organic disease of the liver with organic disease of the heart.

There is a direct and fundamental relation between the function of the liver and that of the lung. Fortunately, the activity and effects of the respiratory process are largely under our control. In the vast power we have of modifying these by appropriate regulations, having reference to the great conditions of air, exercise, temperature, and food, we have means much more effectual than any other, in dealing with biliary disorders.

Of these disorders, on the other hand, the neglect of such regulations is by far the most fruitful source.

Thus, for example, may be explained many of the bilious disorders of hot climates. If, in such climates, the food be not regulated in accordance with the smaller needs of the economy as to animal heat, an excess of bile is formed, and disorder of the stomach and intestines—bilious vomiting, and diarrhoea—is the consequence.

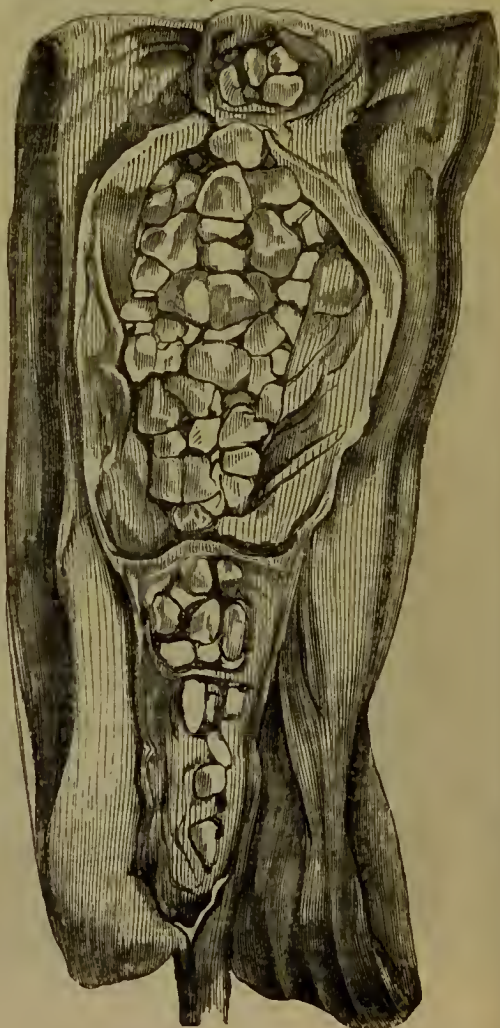
Hence, also, the general repugnance to rich meats, and the greater tendency which these and spirituous liquors unquestionably have to produce disease of the liver, in hot seasons and in tropical climates.

In the same way may be explained the greater frequency of bilious disorders in middle life, when men begin to take less exercise, and their respiration becomes less active, while, on the other hand, the tendency to indulgence at table but too often increases.

We may also often see inverse evidence of these relations in the effect of pure air and active exercise, in relieving various disorders that result from repletion, and from the retention of principles which, if not burnt in respiration, should pass off by the liver as bile. Every sportsman must have remarked the effect of a single day's hunting in clearing the complexion. It has, no doubt, much the same effect on the liver as on the skin."—(*Budd*,)

"The liver in health measures about 12 inches from side to side, and 6 or 7 from its antero-posterior diameter; its bulk corresponds to nearly 100 cubic inches, and its weight varies from 3 to 4 pounds, according to the quantity of blood which it may contain at the time it is examined." (*Dr. Beale*.)

Gall-bladder filled with gall stones, which have all a crust of pure cholesterine. From a man, 64 years of age, who died in King's College Hospital, of softening of the brain. No disease of the liver was suspected.—(*Budd*.)







Gall-bladder and cystic duct containing gall stones. The calculi have all a crust of pure cholesterine.

## GANGLIONIC NERVOUS SYSTEM, OR NERVES OF NUTRITION.

I can only give one engraving of this system from being pressed for time, and having lost the services of my engraver; but in another edition it is my intention to give more engravings of these nerves; they, however, are easily comprehended from the other engravings of nerves, and only differ in appearance by being mostly ganglionic or knotted in groups. They have no common centre, but spread over the entire body wherever nutrition is required, and that of course is in every large or minute part of the frame.—(See pp. 21, 24, and 224.)



1. Under surface of the liver turned up, to bring into view the anterior surface of the stomach. 2. Gall-bladder. 3. Organic nerves enveloping the trunks of the blood-vessels. 4. Pyloric extremity of the stomach and commencement of the duodenum. 5. Contracted portion of the pylorus. 6. Situation of the hour-glass contraction of the stomach, here imperfectly represented. 7. Omentum.

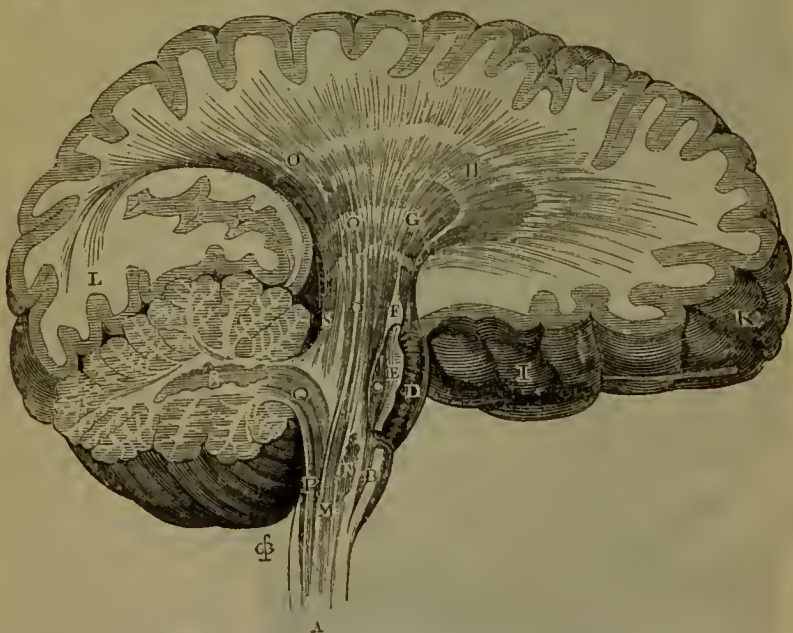
"The organic nerves are spread out in countless numbers upon the great trunks of the arteries, so as to give them a complete envelope; these nerves, never quitting the arteries, accompany them in all their ramifications, and the fibril of the nerve is ultimately lost upon the capillary termination of the artery. It is by these organic nerves that the stomach is enabled to perform its organic functions, which, for the reason assigned, is placed beyond volition, and is without consciousness. By the nerves derived from the sentient system

VIEW OF THE ORGANIC NERVES OF THE STOMACH.



which mingle with the organic, the function of nutrition is brought into relation with the percipient mind, and is made part of our sentient nature. By the commixture of these two sets of nerves, derived from these two portions of the nervous system, though we have no *direct* consciousness of the digestive process—consciousness ceasing precisely at the point where the agency of volition stops, yet pleasurable sensation results from the due performance of the function. Hence the feeling of buoyancy, exhilaration, and vigour, the pleasurable consciousness to which we give the name of health, when the action of the stomach is sound: hence the depression, listlessness, and debility, the painful consciousness which we call disease, when the action of the stomach is unsound: hence, too, the influence of the mental state over the organic process; the rapidity and perfection with which the stomach works when the mind is happy—when the repast is but the occasion and accompaniment of the feast of reason and the flow of soul; the slowness and imperfection with which the stomach works when the mind is harassed with care struggling against adverse events; or is in sorrow and without hope; when the friend that sat by our side, and with whom we were wont to take sweet counsel, is gone, and therefore gone that which made it life to live.

Renovation is the primary and essential office of the stomach, and its organic nerves enable it to supply the ever-recurring wants of the system. Gratification of appetite is a secondary and subordinate office of the stomach, and its sentient nerves enable it to produce the state of pleasurable consciousness when its organic function is duly performed. By the double office thus assigned it, the stomach is rendered what Mr. Hunter named it, the centre of sympathies.

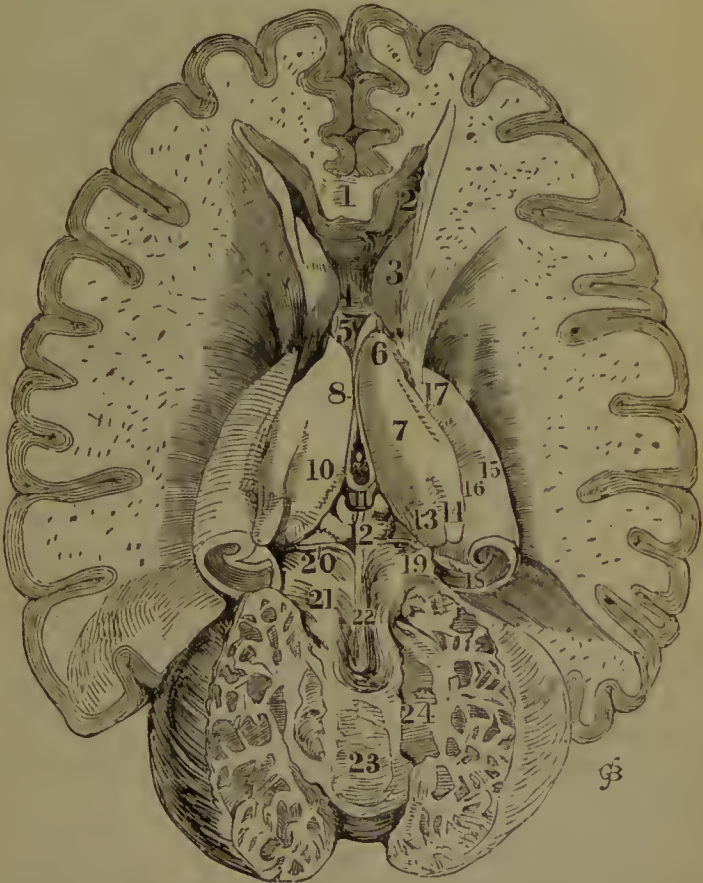


"In this drawing the developement of the brain from the primitive fasciculi of the medulla oblongata, and the formation of the diverging fibres, described by Gall and Spurzheim, are exhibited. A section has been made through the outer

third of the medulla oblongata and cerebellum; the crus cerebelli has been divided, and the outer convolutions of the right hemisphere carefully raised in the direction of the fibres."—(*Quain and Wilson.*)

A. The medulla oblongata. B. The corpus pyramidale. c. The fibres of the corpus pyramidale expanding in the grey substance of the pons Varolii. d. The pons Varolii. e. The divided edge of the transverse or converging fibres of the pons Varolii. f. The passage of the fibres of the corpus pyramidale through the crus cerebri. g. The course of the fibres through the thalamus opticus, the inferior cerebral ganglion of Gall. n. The corpus striatum (superior cerebral ganglion, Gall), from which the fibres diverge to the convolutions of the middle and anterior lobes. i. The lower part of the middle lobe of the cerebrum. k. The anterior lobe. L. The posterior lobe. m. The corpus olivare. n. The ganglion of the corpus olivare. o, o. The course of the fibres of the corpus olivare through the pons Varolii, crus cerebri, thalamus opticus, and corpus striatum, to expand into the upper convolutions of the hemisphere and posterior lobe. p. The corpus restiforme. q. The fibres of the corpus restiforme entering the substance of the cerebellum. r. The corpus dentatum (vel rhomboideum), or ganglion of the cerebellum. s. The processus è cerebello ad testes, or fibres of communication between the cerebellum and cerebrum.

B



A

Section of the base of the brain, showing the NERVOUS CENTRES from and upon which the mind makes impressions to communicate sensation and motion to

every part of the body through its telegraphic system, the nerves which here all concentrate. *B* is the forepart of the brain, top of the forehead; *A* is the cerebellum at the back of the head cut open to show other parts. A great deal has been written on the pituitary gland, No. 11, as the one central point where the mind acts from.—See page 13 of this work.

1. The anterior extremity of the corpus callosum. 2. The anterior corner of the lateral ventricles. 3. Part of the corpus striatum. 4. The anterior commissure of the third ventricle. 5. The crura of the fornix. 7. The thalamus opticus. 8. The fissure between the thalami optici, which is called the third ventricle. 9. The foramen commune posterius. 11. The pineal gland. 12. The corpora quadrigemina. 13. The corpus geniculatum internum of the thalamus opticus. 14. Part of the corpus geniculatum externum. 15. The hippocampus major. 16. The corpus fimbriatum. 17. The pes hippocampi. 18. The cut surface of the hippocampus major, showing the convoluted arrangement of the grey and white substance of which it consists. 19, 20. The upper surface of the crus cerebri. 21. The processus cerebelli ad testes. 22. The valve of Vieussens. 23. The middle portion of the cerebellum connecting the two lateral lobes.—(Quain and Wilson.)

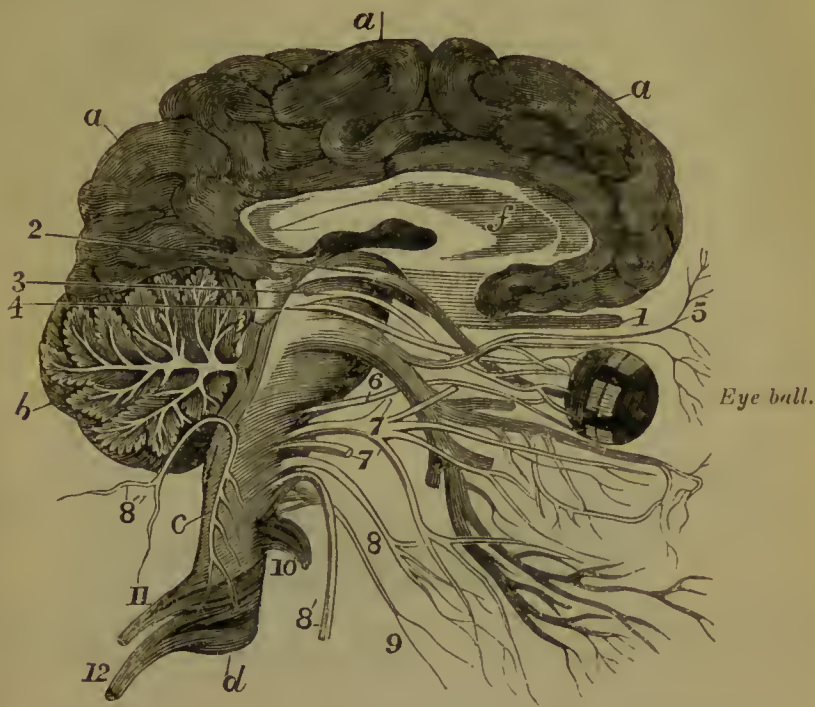


“With the spinal cord (in its limited sense) there are connected thirty-one pairs of nerves; each of which corresponds to a vertebral segment of the body, and has two sets of roots, an anterior and a posterior, differing in their functional endowments. These divisions, of which the anterior is by far the larger, proceed to the anterior and posterior parts of the body respectively; and are chiefly distributed to the skin and the muscles. The anterior branch is that which communicates with the sympathetic nerve.—In addition to these, however, the cranial prolongation of the spinal axis is the centre of all the cephalic nerves, save those of special sensation, which terminate in their respective ganglia. These cephalic nerves are for the most part distinguished by the peculiarity of their endowments.—(Carpenter.)

Transverse section of Human Spinal Cord, through the middle of the lumbar enlargement, showing on the right side the course of the nerve-roots, and on the left the position of the



principal tracts of vesicular matter:—A, A, anterior columns; P, P, posterior columns; L, L, lateral columns; a, anterior median fissure; p, posterior median fissure; b, b, b, anterior roots of spinal nerves; c, c, posterior roots; d, d, tracts of vesicular matter in anterior column; e, tracts of vesicular matter in posterior column; f, spinal column; g, substantia gelatinosa.



SIDE VIEW OF THE HUMAN BRAIN SHOWING THE NERVES.

**SPINAL CENTRAL SYSTEM.**—The three high order of nerves, through and by which the mind acts and governs the body.—(See p. 11 of this work.)

Longitudinal section of the cerebrum, (*in the upper part of the head*), cerebellum, (*back of the head*), and medulla oblongata. a a a, the cerebrum. b, the cerebellum. c, the medulla oblongata. d, the spinal marrow. f, the lateral ventricle. 1, the olfactory nerve. 2, the optic nerve. 3, 4, 5, 6, the 3rd, 4th, 5th, and 6th nerves. 7, the portion of the 7th nerve. 7', the auditory nerve. 8, the glossopharyngeal nerve. 8', the par vagum. 8'', the spinal accessory nerve. 9, the hypoglossal nerve. 10, the suboccipital nerve. 11, 12, spinal nerves.

When we examine the outer surface of the brain, we observe it folded or convoluted, (which shows a longitudinal section of the brain and upper part of the spinal marrow, with the nerves attached to them); and when it is cut into, we find it composed, 1st, of a grey pulpy substance, mostly placed externally, and, 2ndly, of a similar white substance, placed internally. The same materials exist in the spinal marrow, but the white matter is external, while the grey is internal.

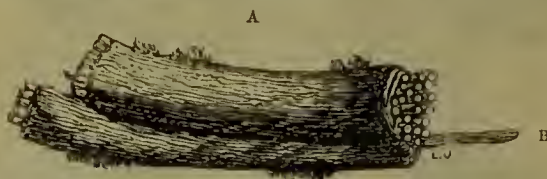
The nerves generally, whatever be their apparent origin, pass through the system in ramifications more or less complicated, and, like electric wires, only discharge their functions, whether of motion or sensibility, at their terminations. The nervous cords are thus subject to endless division and subdivision, until they



become in many cases so infinitely minute as to escape all observation, even by the aid of the microscope. Since each fibre has its own peculiar destination and special function, and since this destination and function is in relation with the brain, it must be apparent that the various ramifications, in successively uniting together, as they approach their origin, can never be deprived of their proper functions, nor lose their individuality. It must not, consequently, be supposed that there is any analogy between the cases of blood-vessels running into each other, where the confluent streams are mixed, to form a single current after their union, and those of nerves coalescing, so that two or more fibres form a single cord. It must be considered, on the contrary, that in such coalition there is no actual mixture of nervous substance, and that the fibres are merely ranged side by side in mechanical juxtaposition, without any more intimate union.

These conclusions, which are derived from analogies of irresistible force, based upon the physiological properties of the nerves, are fully corroborated and confirmed by direct observation. Each nervous cord is ascertained to be a bundle of fibres enclosed in a common sheath, these component fibres being very numerous, and of unequal thickness.

A nerve is represented in the following engraving, as drawn by Sir Charles Bell, consisting of many cords, or funiculi, wrapped up in a common cellular sheath. A is the nerve, and B a single funiculus drawn out from the rest. Independently of the common sheath, or neurilemma, each particular component cord



has a sheath of its own. All these sheaths are composed of the same fibrous tissue, which appears to be nothing more than a continuation of the tissue which constitutes the neurilemma or sheath of the spinal cord.—(*Lardner*.)

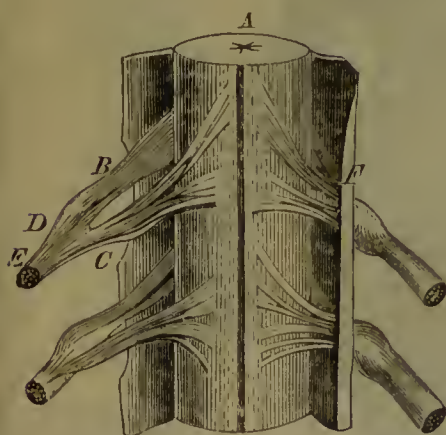


The interesting discovery has been made within these few years, by German anatomists, that these fibres, and all the fibres composing the nervous matter, are tubes filled with a fluid. The annexed sketch shows the fibres of one of the nerves magnified, with the fluid contained in them escaping from their extremities. It is probable that this discovery may be the means of throwing some light upon the functions of this hitherto little understood part of the animal frame.

The nervous system is made up of two substances, readily distinguishable by their colour, texture, and consistence. One is greyish, or rather a pale ash colour, and hence named *cineritious* (substantia cinerea); and as in the brain it forms an investment for the white substance, it is usually termed *cortical* (s. corticalis). The other substance is of a pure white colour, and from the relation just indicated is called *medullary* (substantia medullaris.) The grey substance invests the cerebral hemispheres, and forms at the same time several masses disposed in their interior; but in the medulla spinalis it is altogether deeply seated. The white substance, on the contrary, is enclosed by the grey in the brain, but becomes the cortex in the medulla. The cineritious substance is more soft and vascular than the other, and when minutely injected appears as if entirely composed of vessels. Though the white substance in the natural state is not much firmer

than jelly, it acquires a great degree of firmness by maceration in spirit, and presents at all times a distinctly fibrous appearance. When these two sorts of nervous matter are attentively examined, they will be found to consist of a peculiar substance called *neurine*, deposited in the areolæ, of a delicate cellular tissue. This anatomical element, in its natural condition, is soft and semi-fluid, and wherever it predominates much, the part will be pulpy and almost diffuent, whilst other portions of the structure are comparatively firm, by reason of the greater quantity of cellular tissue which they contain. The colour of neurine presents some varieties, being white, grey, or yellowish, and in some places of a dusky hue.

When a thin layer of nervous substance is examined with a microscope, it presents the appearance of small granules, placed in lines more or less regularly; but their form and size are liable to vary. These have been taken by some observers for globules, and have formed the basis of many speculations concerning the nature of nervous action.—(*Quain and Wilson.*)



- A. Spinal marrow.
- B. Root of spinal nerve from back portion.
- C. Root from front portion.
- D. Ganglion on the posterior part.
- E. The two parts united in one cord.
- F. The outer coating of spinal marrow.

A section of the spinal marrow, showing the connexion between it and the spinal nerves by double roots; the nerves of motion and sensation.

According to Sir Charles Bell, Magendie, and others, a part of the filaments which compose each spinal nerve, rise from [or terminate in] the back portion, and a part from the front portion of the spinal marrow (See Eng.) Those which rise from the back portion (*b*), almost immediately run into a ganglion (*d*), and proceeding from this, they unite with those that come from the front portion (*c*), and form the cord (*e*) which goes out to be dispersed over the body. But in entering into the formation of the cord, the filaments retain their filamentary form and original character, and are again, ultimately, separated. The filaments which rise from [or terminate in] the back portion of the spinal marrow, are the nerves of animal sensation. Some few of those are distributed to the muscles of voluntary motion, and endow those organs with a small degree of animal sensibility, by which the mind is informed of the action of the muscles in obedience to the will, and enabled to regulate the extent of the action. The rest of the posterior filaments proceed to the outer skin of the body, and by endowing it with a high degree of animal sensibility, constitute it a general organ of touch, which is the fundamental animal faculty of external relation. They however abound more in some parts than in others. In man, the ends of the fingers are pre-eminently qualified for this function.—(*Graham.*)



**ARACHNOID.**—The arachnoid (cobweb) membrane, so called from its resemblance to a spider's web in its texture, is the second coating. Part of it is in immediate contact with and, inseparable from the dura mater, which has so far the character of a fibro-serous membrane. A space intervenes between the arachnoid and the pia mater, filled with a liquid called the *cerebro-spinal fluid*. —(*Lardner*.)

1. Cerebrum. 2. Cerebellum. 3. Spinal cord. 4. Facial nerve. 5. Brachial nerves. 6. Median nerve. 7. Ulnar nerve. 8. Internal cutaneous nerve. 9. Inter-costal nerves. 10. Lumbar nerves. 11. Sciatic plexus. 12. External peroneal. 13. Tibial nerves. 14. External peroneal nerve. 15. External saphene.

A theoretical illustration of the general form and disposition of the cerebro-spinal system of nerves.—(*Lardner*.)



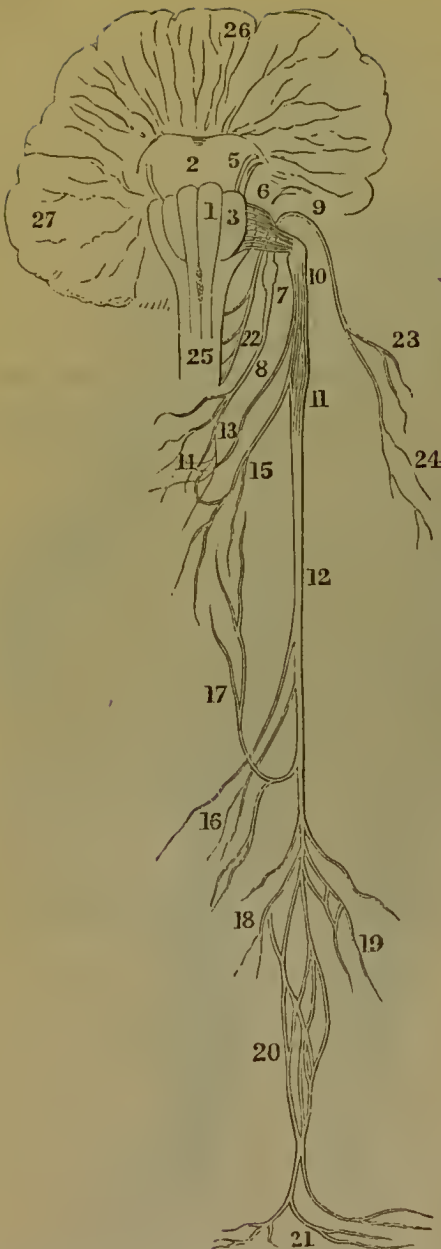
## BRAIN AND SPINAL MARROW.

The dura mater removed from the brain, and spread open along the spinal cord, so as to display the pia mater, covered by the thin and transparent arachnoid membrane.—(*Quain and Wilson.*)

Nos. 1, 1. The convolutions of the two hemispheres of the cerebrum covered by their vascular membrane, the pia mater. 2. The median fissure between the hemispheres, which receives the falx major. 3, 3. The lateral lobes of the cerebellum, also invested with pia mater. 4. The superior vermiform process of the cerebellum. 5, 5. The fissure separating the posterior lobes of the cerebrum from the cerebellum, which lodges the tentorium cerebelli. 6. The depression between the two lobes of the cerebellum, lodging the falx minor. 7, 7. The dura mater of the spinal cord laid open: it is entirely removed below. 8, 8. The membrana dentata, or ligamentum denticulatum, connecting the sides of the spinal cord to the inner surface of the dura mater. 9. The superior swelling of the spinal cord. 10. The middle, or brachial swelling. 11. The inferior, or lumbar swelling. 12. The cauda equina. 13. The posterior longitudinal fissure. 14, 14. The posterior roots of the spinal nerves.

a, a. The eight cervical nerves. b, h. The twelve dorsal nerves. c, c. The five lumbar nerves. d, d. The five sacral nerves. e. The two coccygeal nerves.





THE BRAIN AND NERVOUS CENTRES, AND PNEUMOGASTRIC NERVE BRANCHING OFF FROM IT.

As a specimen of the mode in which the nerves proceed from the brain I give this, called the Pneumogastric, from the Greek, (the lung and the belly), so named from its distribution. "A nerve which arises on each side by many filaments from the lateral part of the medulla oblongata immediately below the origin of the glosso-pharyngeal nerve. It passes out of the cranium along with the glosso-pharyngeal nerve, through the foramen lacerum posterius. Immediately after quitting the cranium, it is slightly enlarged for about an inch of its course, forming what is called its ganglionic enlargement. It descends in the neck at the outer and back part of the common carotid artery, in the cellular sheath of which it is included. In the neck it gives off the pharyngeal branch, the superior laryngeal, and twigs which contribute to form the cardiac plexus. It passes into the chest between the subclavian artery and vein, guiding off the inferior laryngeal or recurrent nerve which twines round the subclavian artery on the right side, and the aorta on the left. In the chest it sends twigs contributing to the formation of the pulmonary and œsophageal plexuses. Lastly, entering the abdomen, it is finally dispersed on the stomach, sending twigs to the omentum and to the neighbouring abdominal plexuses.

Origin and distribution of the Eight Pair of nerves.—1, 3, 4. The Medulla Oblongata. 1. The Corpus Pyramidale on one side. 3. The Corpus Olivare. 4. The Corpus Restiforme. 2. The Pons Varoli. 5. The Facial nerve. 6. The origin of the Glosso-pharyngeal nerve. 7. The ganglion of Andersch. 8. The trunk of the nerve. 9. The Spinal Accessory nerve. 10. The ganglion of the Pneumogastric nerve. 11. Its plexiform ganglion. 12. Its trunk. 13. Its pharyngeal branch forming the pharyngeal plexus (14) assisted by a branch from the glosso-pharyngeal (8) and one from the superior laryngeal nerve (15). 16. Cardiac branches. 17. Recurrent laryngeal branch. 18. Anterior pulmonary branches. 19. Posterior pulmonary branches. 20. Œsophageal plexus. 21. Gastric branches. 22. Origin of the Spin

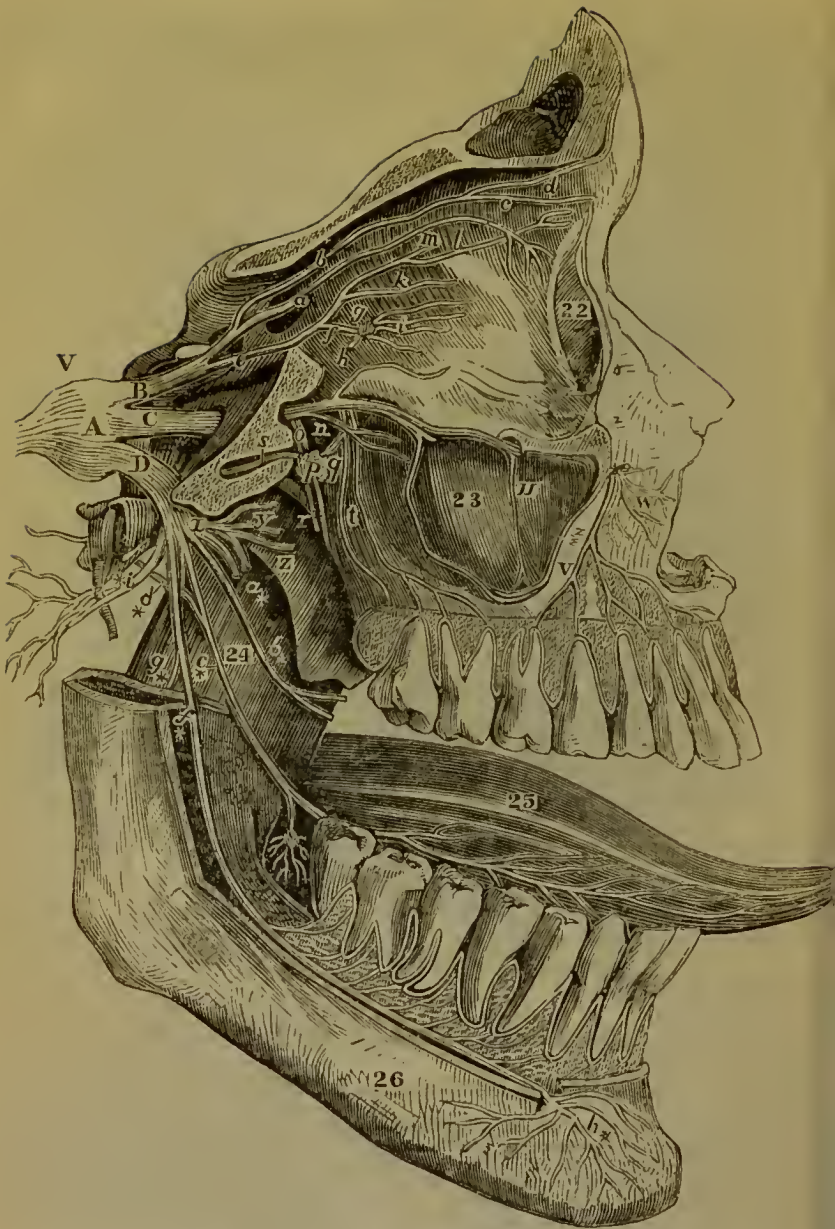
accessory nerve. 23. Its branches distributed to the sterno-mastoid muscle. 24. Its branches to the trapezius muscle. 27. Back of the head, the cerebellum, the opposite side to the fore part of the brain. 25. A continuation of the spinal marrow cut off.—(From Carpenter.)



THE TELEGRAPH WIRES OR NERVES FROM THE BRAIN TO THE EYE.

The nerves of the orbit, with the ophthalmic and otic ganglia, are here shown.

1. The section of the frontal bone, showing the cavity of the frontal sinus. 2. Nasal bone of the left side. 19. The internal carotid artery. II. The optic nerve (*to the eye.*) III. The third nerve. The superior branch of the third nerve. b. Its inferior branch. c. The branch to the ophthalmic ganglion. d. The ophthalmic or lenticular ganglion. e. The upper fasciculus of ciliary nerves. f. The lower fasciculus. IV. The fourth nerve. VI. The sixth nerve. The trunk of the inferior maxillary nerve. k. Its motor root. l. The otic ganglion. m. The internal pterygoid nerve, piercing the otic ganglion. n. Filaments of communication with the auricular nerve.—(Quain and Wilson)



TELEGRAPH WIRES OR NERVES FROM THE BRAIN TO THE TONGUE, JAWS, &c., &c.

22. The depression in the lachrymal bone for the lachrymal sac (tears.) V. The fifth nerve. A. The Casserian ganglion. B. The ophthalmic nerve (to the eye.) a. The lachrymal nerve (causing tears to flow.) b. The frontal nerve. e. The nasal nerve (for smell.) f. Branch to the ophthalmic ganglion. g. The ophthalmic ganglion. h. Its branch to the inferior division of the maxillary nerve.



sion of the third nerve. i. Its ciliary branches. k. Ciliary branch of the nasal to the globe of the eye. m. The continuation of the nasal nerve through the anterior ethmoidal foramen into the nose. C. The superior Maxillary nerve. n. Its orbital branch. o. Branches of communication from Meckel's ganglion. p. Meckel's ganglion. q. Spheno-palatine branches of Meckel's ganglion. r. Palatine nerves. t. Posterior dental branches of the superior maxillary nerve. u. A dental nerve given off from the superior maxillary while in its canal, and passing between the mucous membrane and outer wall of the antrum to supply the teeth. v. Anterior dental branch. w. Terminal branches of the superior maxillary, distributed to the face. x. The muscular division of the nerve. c\*. The gustatory nerve. d\*. The chorda tympani nerve. b\*. The mental nerve. i\*. The auricular nerve.—(Quain.)



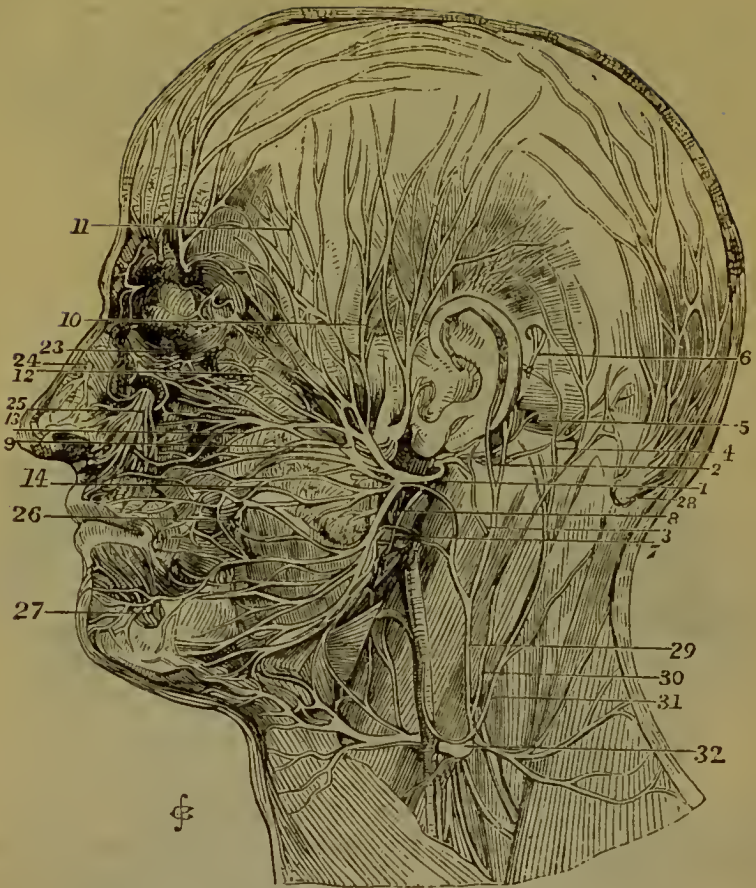
The distribution of the olfactory, (to the nose), or first pair of cerebral nerves, by which the sense of smell is communicated to the centres in the brain.

The distribution of the filaments of the olfactory, sphenopalatine, and fifth nerves, to the mucous lining of the external wall of the right nostril.

1. The cavity of the frontal sinus. 2. The nasal spine of the frontal bone. 3. The right nasal bone. 4. The root of the crista galli. 5. The roof of the right orbit. 6. The anterior clinoid process of the sphenoid bone. 7. The concavity of the sella Turcica. 8. The posterior clinoid process. 9. The sphenoidal sinus. 10. The basilar process of the occipital bone. 11. The petrous portion of the temporal bone. 12. The anterior condyloid foramen of the mastoid process. 13. The right condyle of the occipital bone. 14. The inner aspect of the Eustachian tube. 15. The styloid process of the temporal bone. 16. The opening of the superior spongy bone, arching over the superior meatus. 17. The projection of the middle spongy bone, arching over the middle meatus. 18. The projection of the inferior spongy bone, arching over the inferior meatus. 19. Projection of the middle spongy bone, arching over the inferior meatus. 20. Projection of the inferior spongy bone, arching over the inferior meatus. 21. Section of the soft parts of the nose. 22. Section of the upper lip. 23, 23. Section of the hard palate. 24. The naso-palatine canal. 25. Section of the uvula.

A. The bulb of the olfactory nerve. B. The three roots by which it arises from the brain. C, C. The distribution of its filaments to the mucous membrane covering the superior and middle turbinate bones. D. A twig from the nasal branch of the ophthalmic division of the fifth nerve. E. The sphenopalatine nerves, or nasal branches of Meckel's ganglion, entering the nasal fossa through the sphenopalatine foramen.—(Quain and Wilson.)

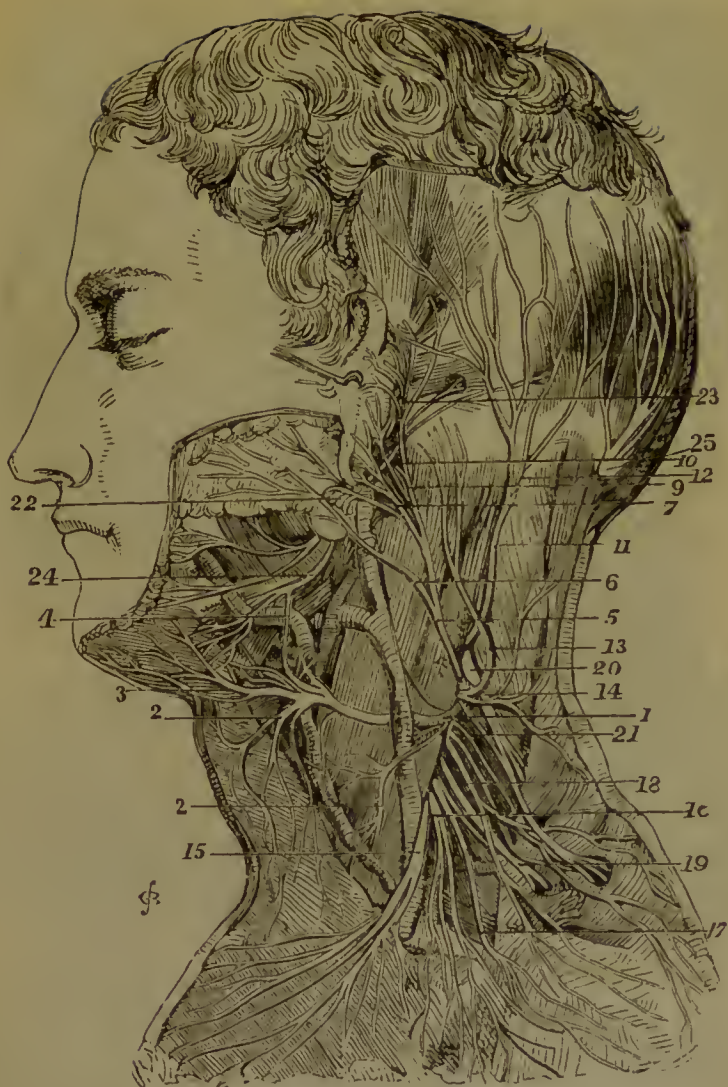




THE SUPERFICIAL NERVES OF THE FACE AND HEAD.—(*Lardn. r*)

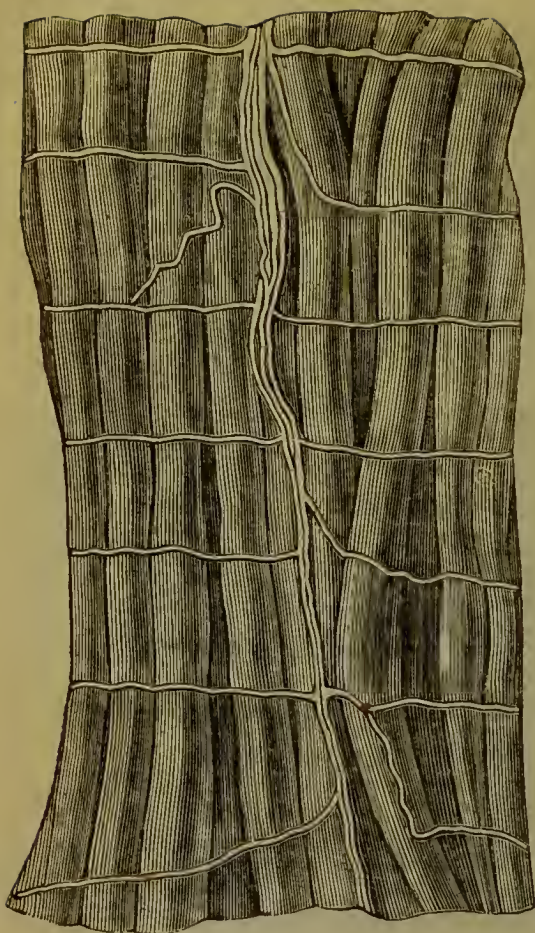
These nerves govern all the motions of the muscles of the scalp, the ear, the mouth, lips, nose, and eyelids, the integuments of the ear, and the upper part of the neck.

The nerves here described, which are all ramifications of the seventh pair, are exclusively motor, including no sensitive fibres. The parts to which they give motion receive sensibility from the nerves of the fifth pair, called the trifacial or trigeminal nerves. Thus the functions of motion and sensibility are in this case attached to different systems of nerves, while in the case represented in the following figures of the cervical and other nerves, each cord is a compound one, which includes both motor and sensitive fibres; and consequently while it governs the movements of the parts over which it is distributed, it also receives sensitive impressions from them, which it transmits to the nervous centre.



CERVICAL NERVES, TO CONVEY MOTION AND SENSATION TO THE PARTS REPRESENTED.—*Lardner.*

A system of nerves, also connected with the muscles of the neck and the lower part of the head, called the *cervical plexus*, is represented in the above engraving. A transverse branch (1) is directed forwards towards the jaw, and diverges into two ramifications; one (2) descending along the neck, and the other (3) ascending along the jaw. A branch (5), called the auricular, ascends to the ear. Various branches (15, 16, 17, 19) descend to the chest.



ENG. I.

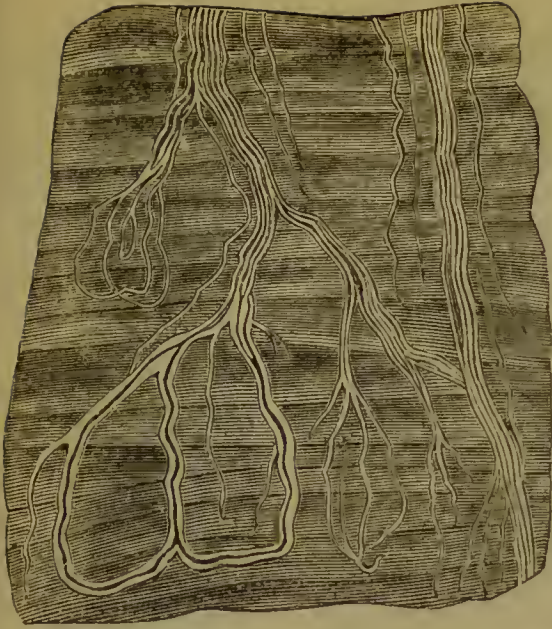
(*Quain & Wilson.*)

Magnified view of muscular fibres in the state of repose. The main nerve is seen proceeding down the centre, with branches from it on each side.

THE NERVES OR TELEGRAPH WIRES IN THE MUSCLES OR FLESH.

This shews the state of the muscles and nerves when a limb is at rest; when the limb or any part is moved, the electrical shock from the nervous centres by the action of the mind, is shown at engraving 3. See page 11.

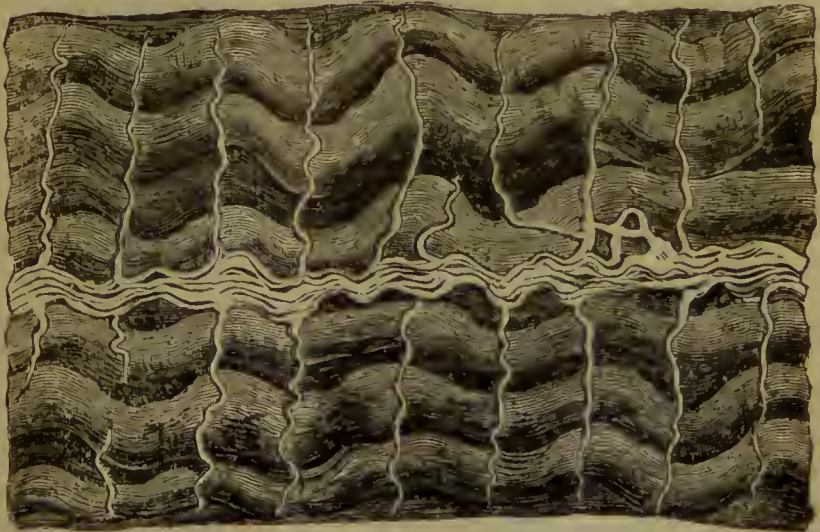




ENG. II.

(Quain &amp; Wilson,)

This engraving shows how the ultimate filaments of the nerves are disposed. After branching out somewhat, as in engraving I., they become curved and return unto themselves, forming loops; or they incline towards a neighbouring branch, and form inverted arches.



ENG. III.—(Quain & Wilson.)—This engraving represents the fibres in a state of contraction, when they are thrown into waving zig-zag lines. This state is caused by the operation of the mind on the nervous centres in the brain, sending its telegraphic messages for action to some part by these nerves. This electric shock is performed for every voluntary motion.

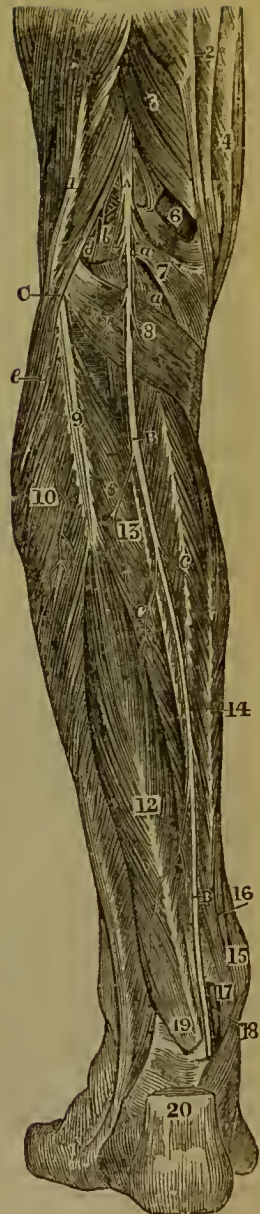


ENG. 1.

*The great Sciatic Nerve, E, is often the seat of inflammatory action, called sciatica. See page 75 of this work.*



ENG. 2.



The branches of the sacral plexus of spinal nerves, as they issue from the lower part of the spinal column, to give sensation and motion to the legs.

ENG. 1.—23. The hip joint. 5. The lower end of the back bone. 18, 19, 20, 21. Muscles of the thigh. E. The great sciatic nerve. D. The small sciatic nerve. A, A, A. The posterior branches of the sacral nerves seen emerging from the vertebra of the spine. B. The gluteal nerve. C, C. The internal pudic nerve. The great sciatic nerve is the largest nerve in the body; from its size and direction it may be considered as the continuation or prolongation of spinal plexus, it being impossible to determine where the one ceases or the other begins. The fasciculi, which enter into its composition or bundle, are derived from all the nerves which go to form the sacral plexus, and every voluntary motion of the leg and foot has to be transmitted through some of the nerves of this bundle. The great sciatic nerves divide generally about the middle of the thigh into an external and internal branch, the latter proceeding down to the heel, as shown in Eng. 2; from this will be seen the nature of sciatica.—See page 75.

ENG. 2.—A, A, shows the continuation of sciatic nerve, called here popliteal nerve. B. The fibular nerve. 10, 12, 13. Muscles. The tendon Achilles divided. 19. The tendon of the flexor muscle. 20. The tendon Achilles. 18. The posterior tibial artery.

I quote the following and other articles from Dr. Southwood Smith's very interesting work, "The Philosophy of Health," in two volumes, with many cuts; Cox, King William Street, London, and all booksellers, price 5s. This elaborate work enters very extensively into the physical and mental constitution of man, and is well worth reading.

FIRST OR PRIMARY STRUCTURE OF THE BODY.—Dr. Smith says,—“The first primary tissue of the body is the peculiar substance termed *membrane*. It has been already stated that one of the ultimate forms of animal matter is a coagulable substance, becoming concrete or solid under the process of coagulation. The commencement of organization seems to be the arrangement of this concrete matter into straight thready lines, at first so small as to be imperceptible to the naked eye. Vast numbers of these threads successively uniting, at length form a single thread of sufficient magnitude to be visible, but still smaller than the finest thread of the silkworm. If the length of these threads be greater than their breadth, they are called fibres; if, on the contrary, their breadth exceed their length, they are termed plates or laminae. By the approximation of these fibres or plates in every possible direction, and by their accumulation, combination, and condensation, is constituted the simplest form of organized substance, the primary tissue called membrane.

“Membrane once formed is extensively employed in the composition of the body; it is indeed the material principally used in producing, covering, containing, protecting, and fixing every other component part of it. In a word, it forms the basis upon which the other parts are superinduced; or rather the mould into which their particles are deposited; so that were it possible to remove every other kind of matter, and to leave this primary tissue unaltered in figure and undiminished in bulk, the general form and outline of the body, as well as the form and outline of all its individual parts, would remain unchanged.

“Membrane exists under several distinct forms; a knowledge of the peculiarities of which will materially assist us in understanding the composition of the body. The simplest form of membrane, and that which is conceived to constitute the original structure from which all the others are produced, is termed the *cellular*. When in thin slices, *cellular membrane* appears as a semitransparent and colourless substance; when examined in

thicker masses, it is of a whitish or greyish colour. It consists of minute threads, which cross each other in every possible direction, leaving spaces between them, and thus forming a mesh or net-work, not unlike the



A single film of the cellular tissue, (composing the substance of the body) lifted up and slightly distended.—*From Smith.*

spider's web. The term cells, given to these interspaces, is employed rather in a figurative sense than as the expression of the fact ; for there are no such distinct partitions as the term cell implies. The best conception that can be formed of the arrangement of the component parts of this structure is, to suppose a substance consisting of an infinite number of slender thready lines crossing each other in every possible direction. The interspaces between these lines during life, and in the state of health, are filled with a thin exhalation of an aqueous nature, a vapour rather than a fluid, rendering and keeping the tissue always moist. This vapour consists of the thinner part of the blood, poured into these interstitial spaces by a process hereafter to be described, termed secretion. When occupying those spaces, it makes no long abode within them, but is speedily removed by the process of absorption. In health, these two operations exactly equal each other ; but if any cause arise to disturb the equilibrium, the vapour accumulates, condenses and forms an aqueous fluid, which distends the cells and gravitates to the most depending parts. Slightly organized as this tissue is, and indistinct as its vita functions may be, it is obvious that it must be the seat of at least two vital functions, secretion and absorption.

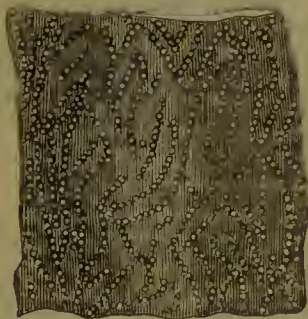
“ It is certain that the interspaces or cells of this membrane have no determinate form or size, that they communicate freely with each other, and that this communication extends over the whole body ; for if a limb which has been infiltrated be frozen, a thousand small icicles will be formed, assuming the shape of the containing cells, some of which are found to be circular, and others cylindrical, and so on. If air or water escape into any particular part of the body, it is often effused over the whole extent of it, and butchers are observed to inflate animals by making a puncture in some part where the cellular tissue is loose, and from this one aperture the air is forced to the most distant parts of the body.

“ Cellular membrane, variously modified and disposed, forms the main



bulk of all the other solid parts of the body, constituting their common envelope and bond of union, and filling up all their interstices. It is dense or loose, coarse or fine, according to its situation and office. Wherever it is subject to pressure, it is dense and firm, as in the palm of the hand and the sole of the foot; around the internal organs it is more loose and delicate, and it becomes finer and finer as it divides and subdivides, in order to envelope the soft and tender structures of the body.

"According to some who have carefully examined with the microscope its component threads, they consist of minute particles of a globular figure;



A portion of cellular tissue, very highly magnified, showing the strings of globules of which its ultimate fibres are by some supposed to consist.

other microscopical observers regard the cellular threads as coagulated or condensed animal substance, perfectly amorphous (without form).

"Every part of this tissue is penetrated by arterics, veins, absorbents, and nerves, endowing it with properties truly vital, though in a less degree than any of the other primary tissues; and varied and important as the uses are which it serves in the economy, the most manifest, though certainly not the only ones, are those which depend upon its physical properties of cohesiou, flexibility, extensibility, and elasticity.



1, a portion of adipose (fatty) tissue; 2, minute bags containing the fat; 3, a cluster of the bags, separated and suspended.

"The tissue which contains the fat, termed the *adipose*, is the second form of membrane; it is obviously a modification of the cellular, from which it differs, both in the magnitude of its fibres, whence it constitutes a tougher and coarser web, and in their arrangement; for it is so disposed



as to form distinct bags in which the fat is contained. Adipose tissue consists of rounded packets, separated from each other by furrows; each packet is composed of small spheroidal particles; each particle is again divisible into still smaller grains, which, on minute inspection, present the appearance of vesicles filled with the adipose matter.

"The cells of the cellular tissue, as has been shown, are continuous over the whole body; but each adipose vesicle is a distinct bag, having no communication whatever with any other. The cellular tissue is universally diffused; but the adipose is placed only in particular parts of the body; principally beneath the skin, and more especially between the skin and the abdominal muscles, and around some of the organs contained in the chest and abdomen, as the heart, the kidneys, the mesentery, and the omenta. In most of these situations some portion of it is generally found, whatever be the degree of leanness to which the body may be reduced; while in the cranium, the brain, the eye, the ear, the nose, and several other organs, there is none, whatever be the degree of corpulency. The uses of the fat, which are various, will be stated hereafter.

"The third form of membrane is termed the *serous*. Like the adipose, *serous membrane* is a modification of the cellular, and, like it also, it is limited in its situation to particular parts of the body, that is, to its three great cavities, namely, the head, the chest, and the abdomen. To the two latter it affords an internal lining, and to all the organs contained in all the three cavities, it affords a covering. By its external surface it is united to the wall of the cavity or the substance of the organ it invests; by its internal surface it is free and unattached: whence this surface is in contact only with itself, forming a close cavity or shut sac, having no communication with the external air. Smooth and polished, it is rendered moist by a fluid which is supposed to be exhaled in a gaseous state from the serum of the blood; and from this serous fluid the membrane derives its name.

"Though thin, serous membrane is dense, compact, and of great strength in proportion to its bulk: it is extensible and elastic; extensible, for it expands with the dilatation of the chest in inspiration; elastic, for it contracts with the diminished size of the chest in expiration. In like manner, it stretches with the enlargement of the stomach during a hearty meal, and contracts as the stomach gradually diminishes on emptying itself of its contents. It is furnished with no blood-vessels large enough to admit the colouring matter of the blood; but it is supplied with a great number of the colourless vessels termed exhalents, with the vessels termed absorbents, and with a few nerves. It indicates no vital properties, but those which are common to the simple form of the primary tissue. Its specific uses are to afford a lining to the internal cavities; to furnish a covering to the internal organs; by its polished and smooth surface, to allow a free motion of those organs on each other, and by the moisture with which it is lubricated, to prevent them from adhering together, however closely, or for however long a period they may be in contact.

"The fourth form of membrane, the *fibrous*, named from the obvious arrangement of its component parts, consists of longitudinal fibres, large enough to be visible to the naked eye, placed parallel to each other, and

closely united. Sometimes these fibres are combined in such a manner as to form a continuous and extended surface, constituting a thin, smooth, dense, and strong membrane, such as that which lines the external surface of bones termed *periosteum*, or the internal surface of the skull (*dura mater*). At other times they form a firm and tough expansion (aponeurosis) which descends between certain muscles, separating them from each other, and affording a fixed point for the origin or insertion of neighbouring muscles ; or which is stretched over muscles, and sometimes over even an entire limb, in order to confine the muscles firmly in their situation, and to aid and direct their action. Fibrous membrane also constitutes the compact, strong, tough, and flexible bands used for tying parts firmly together, termed *ligaments*, principally employed in connecting the bones with each other, and particularly about the joints ; and lastly, fibrous membrane forms the rounded white cords in which muscles often terminate, called *tendons*, the principle use of which is to connect the muscles with the bones, and to serve as cords or ropes to transmit the action of the muscle to a distant point, in the accomplishment of which purposes their operation appears to be entirely mechanical.

"The fifth form of membrane, the *mucous*, derives its name from the peculiar fluid with which its surface is covered, called mucus, and which is secreted by numerous minute glands, imbedded in the substance of the membrane. As serous membrane forms a shut sac, completely excluding the air, mucous membrane, on the contrary, lines the various cavities which are exposed to the air, such as the mouth, the nostrils, the wind-pipe, the gullet, the stomach, the intestines, the urinary organs, and the uterine system. Its internal surface, or that by which it is attached to the passages it lines, is smooth and dense ; its external surface, or that which is exposed to the contact of the air, is soft and pulpy, like the pile of velvet. It bears a considerable resemblance to the external surface of the rind of the ripe peach, owing to the ciliated membrane, page 367.

"Unlike all the other tissues of this class, the mucous membranes are the immediate seat of some of the most important functions of the economy ; in the lung, respiration ; in the stomach, of digestion ; in one part of the intestine, of chylification ; in another, of excretion ; while in the mouth and nose, they are the seat of the animal functions of taste and smell ; and they are highly organized in accordance with the importance of the functions they perform.

"The last form of membrane which it is necessary to our present purpose to particularize, is that which constitutes the external covering of the body, and which is called the *skin*. The skin is everywhere directly continuous with the mucous membranes that line the internal passages, and its structure is perfectly analogous. Both the external and the internal surface of the body may be said therefore to be covered by a continuous membrane, possessing essentially the same organization, and almost identically the same chemical composition. The skin is an organ which performs exceedingly varied and important functions in the economy, to the understanding of which it is necessary to have a clear conception of its structure ; some further account of it will therefore be required ; but this will be more advantageously given when the offices it serves are explained.

"Such is the structure, and such are the properties, of the first distinct form of organized matter. The second primary tissue, termed the *cartilaginous*, is a substance intermediate between membrane and bone. The nature of its organization is not clearly ascertained. By some anatomists, it is regarded as a uniform and homogeneous substance, like firm jelly, without fibres, plates, or cells; others state that they have been able to detect in it longitudinal fibres, interlaced by other fibres in an oblique and transverse direction, but without determinate order. All are agreed that it is without visible vessels or nerves: not that it is supposed to be destitute of them, but that they are so minute as to elude observation. Its manifest properties are wholly mechanical. It is dense, strong, inextensible, flexible, and highly elastic. It is chiefly by its property of elasticity that it accomplishes the various purposes it serves in the economy. It is placed at the extremities of bones, especially about the joints, where, by its smooth surface, it facilitates motion, and, by its yielding nature, prevents the shock or jar which would be produced were the same kind and degree of motion effected by a rigid and inflexible substance. Where a certain degree of strength with a considerable degree of flexibility are required, it supplies the place of bone, as in the spinal column, the ribs and the larynx.

"The third distinct form of organized matter is termed the OSSEOUS tissue. Bone is composed of two distinct substances, an animal and an earthy matter: the former organic, the latter inorganic. The animal or organic matter is analogous both in its nature and in its arrangement to cellular tissue; the earthy or inorganic matter consists of phosphoric acid combined with lime, forming phosphate of lime. The cellular tissue is aggregated into plates or laminae, which are placed one upon another, leaving between them interspaces or cells.

"All the primary tissues which have now been considered consist of precisely the same proximate principles. Albumen is the basis of them all; with the albumen is always mixed more or less gelatin, together with a minute quantity of saline substance: to the osseous tissue is superadded a large portion of earthy matter. With the exception of the mucous, the organization of all these tissues is simple; their vital properties are low in kind and in degree; their decided properties are physical, and the uses they serve in the economy are almost wholly mechanical.

"But we next come to a tissue widely different in every one of those circumstances, a tissue consisting of a new kind of animal matter, and endowed with a property not only peculiar to itself, but proper to living substance, and characteristic of a high degree of vital power. MUSCULAR TISSUE, the fourth distinct form of animal matter, commonly known under the name of flesh, is a substance resembling no other in nature. It consists of a soft and pulpy substance, having little cohesive power, arranged into fibres which are distinctly visible to the naked eye, and which are disposed in a regular and uniform manner, being placed close and parallel to each other.

"These fibres are every where pretty uniformly the same in shape, size, and general appearance, being delicate, soft, flattened, and though consisting of a tender pulp, still solid. When examined under the microscope,



fibres, which to the naked eye appear to be single threads, are seen to divide successively into smaller threads, the minutest or the ultimate division not exceeding, as is supposed, the 40,000th part of an inch in diameter. On the other hand, the fibres which are large enough to be visible to the naked eye, are obviously aggregated into bundles of different magnitude in different muscles, but always of the same uniform size in the same muscle.

"The ultimate thread, or the minutest division of which the muscular fibre is susceptible, is called a filament; the smallest thread which can be distinguished by the naked eye is termed a fibre; and the bundle which is formed by the union of fibres is denominated a fasciculus. The proper muscular substance is thus arranged into three distinct forms progressively increasing in size,—the filament, the fibre, and the fasciculus. The filament, the fibre, the fasciculus, as well as the muscle itself, formed by the aggregation of fasciculi, is each enclosed in its own distinct sheath of cellular membrane.

"Every ultimate thread or filament appears to be provided with the ultimate branch of an artery, vein, and nerve. These vessels are seen ramifying on the surface of the delicate web of membrane that incloses the pulp, but cannot be traced into it."

**ORGANIC AND ANIMAL LIFE.**—By organic life is meant the life of the substances of the body; by animal life is meant the power of the will and the mind over the whole, by the aid of the nervous system. As will be seen in these extracts from Dr. Smith, the substance of the body may have life in it for a short period when the animal power has left it.

"The organs and functions of the animal life are incapable of continuity of action. No voluntary muscle can maintain its action beyond a given time; no effort of the will can keep it in a state of uninterrupted contraction; relaxation must alternate with contraction; and even this alternate action cannot go on long without rest. No organ of sense can continue to receive impression after impression without fatigue. By protracted exertion the ear loses its sensibility to sound, the eye to light, the tongue to savour, and the touch to the quality of bodies about which it is conversant. The brain cannot carry on its intellectual operations with vigour beyond a certain period; the trains of ideas with which it works become, after a time, indistinct and confused; nor is it capable of reacting with energy until it has remained in a state of rest proportioned to the duration of its preceding activity.

"And this rest is sleep. Sleep is the repose of the senses, the rest of the muscles, their support and sustenance. What food is to the organic, sleep is to the animal life. Nutrition can no more go on without aliment, than sensation, thought, and motion without sleep.

"But it is the animal life only that sleeps: death would be the consequence of the momentary slumber of the organic. If, when the brain betook itself to repose, the engine that moves the blood ceased to supply it with its vital fluid, never again would it awake. The animal life (*the power of the will and mind*) is active only during a portion of its existence; the activity of the organic life (*substance of the body*) is never for a moment suspended; and in order to endow its organs with the power



of continuing this uninterrupted action, they are rendered incapable of fatigue: fatigue, on the contrary, is inseparable from the action of the organs of the animal life (*the mind and will*); fatigue imposes the necessity of rest, rest is sleep, and sleep is renovation.

"Between all the functions of the organic life there is a close relation and dependence. Without the circulation there can be no secretion; without secretion, no digestion; without digestion, no nutrition; without nutrition, no new supply of circulating matter, and so through the entire circle. But the functions of the animal life are not thus dependent on each other. One of the circle may be disordered without much disturbance of the rest; and one may cease altogether, while another continues in vigorous action. Sensation may be lost, while motion continues; and the muscle may contract though it cannot feel. One organ of sense may sleep while the rest are awake. One intellectual faculty may be in operation while others slumber. The muscle of volition may act, while there is no consciousness of will. Even the organs of the voice and of progression may perform their office while the sensorium is deeply locked in sleep.

"The two lives are born at different periods, and the one is in active operation before the other is even in existence. The first action observable in the embryo is a minute pulsating point. It is the young heart propelling its infant stream. Before brain, or nerve, or muscle can be distinguished, the heart is in existence and in action; that is, the apparatus of the organic function of the circulation is built up and in operation before there is any trace of an animal organ. Arteries and veins circulate blood, capillary vessels receive the vital fluid, and out of it form brain and muscle, the organs of the animal, no less than the various substances that compose the organs of the organic life. The organic is not only anterior to the animal life, but it is by the action of the organic that existence is given to the animal life. The organic life (*substance*) is born at the first moment of existence; the animal life (*will and mind*) not until a period comparatively distant; the epoch emphatically called the period of birth, namely, the period when the new being is detached from its mother; when it first comes into contact with external objects; when it carries on all the functions of its economy by its own organs, and consequently enjoys independent existence.

"The functions of the organic life are perfect at once. The heart contracts as well, the arteries secrete as well, the respiratory organs work as well the first moment they begin to act as at any subsequent period. They require no teaching from experience, and they profit nothing from its lessons. On the contrary, the operations of the brain, and the actions of the voluntary muscles, feeble and uncertain at first, acquire strength by slow degrees, and attain their ultimate perfection only at the adult age. How indistinct and confused the first sensations of the infant! Before it acquire accuracy, precision, and truth, how immense the labour spent upon perception! Sensations are succeeded by ideas; sensations and ideas coalesce with sensations and ideas; combinations thus formed suggest other combinations previously formed, and these a third, and the third a fourth, and so is constituted a continuous train of thought. But the infantile associations between sensation and sensation, between idea

and idea, and between sensations and ideas, are, to a certain extent, incorrect, and to a still greater extent inadequate; and the misconception necessarily resulting from this early imperfection in the intellectual operations is capable of correction only by subsequent and more extended impressions. During its waking hours, a large portion of the time of the infant is spent in receiving impressions which come to it every instant from all directions, and which it stores up in its little treasury; but a large portion is consumed in the far more serious and difficult business of discrimination and correction. (*The soul, or immortal part, is developing its powers as the organism of the brain comes to maturity.*)

"The organic life may exist after the animal life has perished. The animal life is extinguished when sensation is abolished, and voluntary motion can be performed no more. But disease may abolish sensation and destroy the power of voluntary motion, while circulation, respiration, secretion, excretion, in a word, the entire circle of the organic functions continues to be performed. In a single instant apoplexy may reduce to drivelling fatuity the most exalted intellect, and render powerless and motionless muscles of gigantic strength; while the action of the heart and the involuntary contractions of the muscles may not only not be weakened, but may act with preternatural energy. In a single instant apoplexy may even completely extinguish the animal life, and yet the organic may go on for hours, days, and even weeks; while catalepsy, perhaps the most singular disease to which the human frame is subject, may wholly abolish sensation and volition, while it may impart to the voluntary muscles the power of contracting with such unnatural energy and continuity, that the head, the trunk, the limbs may become immovably fixed in whatever attitude they happen to be at the moment the paroxysm comes on. In this extraordinary condition of the nervous system, however long the paroxysm last, and however complete the abolition of consciousness, the heart continues to beat, and the pulse to throb, and the lungs to respire, and all the organic organs to perform their ordinary functions. Dr. Jebb gives the following description of the condition of a young lady who was the subject of this curious malady.

"My patient was seized with an attack just as I was announced. At that moment she was employed in netting; she was in the act of passing the needle through the mesh; in that position she became immoveably rigid, exhibiting, in a pleasing form, a figure of death-like sleep, beyond the power of art to imitate, or the imagination to conceive. Her forehead was serene, her features perfectly composed. The paleness of her colour, and her breathing, which at a distance was scarcely perceptible, operated in rendering the similitude to marble more exact and striking. The position of her fingers, hands, and arms was altered with difficulty, but preserved every form of flexure they acquired: nor were the muscles of the neck exempted from this law, her head maintaining every situation in which the hand could place it, as firmly as her limbs."

"In this condition of the system the senses were in a state of profound sleep; the voluntary muscles, on the contrary, were in a state of violent action; but this action not being excited by volition, nor under its control, the patient remained as motionless as she was insensible. The brain

was in a state of temporary death; the muscle in a state of intense life. And the converse may happen: the muscle may die, while the brain lives; contractility may be destroyed, while sensibility is perfect; the power of motion may be lost, while that of sensation may remain unaffected. A case is on record, which affords an illustration of this condition of the system. A woman had been for some time confined to her bed, labouring under severe indisposition. On a sudden she was deprived of the power of moving a single muscle of the body; she attempted to speak, but she had no power to articulate; she endeavoured to stretch out her hand, but her muscles refused to obey the commands of her will, yet her consciousness was perfect, and she retained the complete possession of her intellectual faculties. She perceived that her attendants thought her dead, and was conscious of the performance upon her own person of the services usually paid to the dead; she was laid out, her toes were bound together, her chin was tied up; she heard the arrangements for her funeral discussed, and yet she was unable to make the slightest sign that she was still in the possession of sense, feeling, and life.

"In one form of disease, then, the animal life, both the sensitive and the motive portions of it, may perish; and in another form of disease, either the one or the other part of it may be suspended, while the organic life continues in full operation; it follows that the two lives, blended as they are, are distinct, since the one is capable of perishing without immediately and inevitably involving the destruction of the other.

"And, finally, as the organic life is the first born, so it is the last to die; while the animal life, as it is the latest born, and the last to attain its full development, so it is the earliest to decline and the first to perish. In the process of natural death, the extinction of the animal is always anterior to that of the organic life. Real death is a later, and sometimes a much later event than apparent death. An animal appears to be dead when, together with the abolition of sensation and the loss of voluntary motion, respiration, circulation, and the rest of the organic functions can no longer be distinguished; but these functions go on some time after they have ceased to afford external indications of their action. In man, and the warm-blooded animals in general, suspension or submersion extinguishes the animal life, at the latest, within the space of four minutes from the time that the atmospheric air is completely excluded from the lung; but did the organic functions also cease at the same period, it would be impossible to restore an animal to life after apparent death from drowning and the like. But however complete and protracted the abolition of the animal functions, reanimation is always possible as long as the organic organs are capable of being restored to their usual vigour. The cessation of the animal life is but the first stage of death, from which recovery is possible; death is complete only when the organic together with the animal functions have wholly ceased, and are incapable of being re-established.

"In man, the process of death is seldom altogether natural. It is generally rendered premature by the operation of circumstances which destroy life otherwise than by that progressive and slow decay which is



the inevitable result of the action of organized structure. Death, when natural, is the last event of an extended series, of which the first that is appreciable is a change in the animal life and in the noblest portion of that life. The higher faculties fail in the reverse order of their development; the retrogression is the inverse of the progression, and the noblest creature, in returning to the state of non-existence, retraces step by step each successive stage by which it reached the summit of life.

"And now the processes of life at an end, the body falls within the dominion of the powers which preside universally over matter; the tie that linked all its parts together, holding them in union and keeping them in action, in direct opposition to those powers dissolved, it feels and obeys the new attractions to which it has become subject; particle after particle that stood in beautiful order fall from their place; the wonderful structures they composed melt away; the very substances of which those structures were built up are resolved into their primitive elements; these elements, set at liberty, enter into new combinations, and become constituent parts of new beings; those new beings in their turn perish; from death springs life, and so the changes go on in an everlasting circle.

**"RELATION BETWEEN THE PHYSICAL CONDITION AND HAPPINESS.**—Life depends on the action of the organic organs. The action of the organic organs depends on certain physical agents. As each organic organ is duly supplied with the physical agent by which it carries on its respective process, and as it duly appropriates what it receives, the perfection of the physical condition is attained; and, according to the perfection or imperfection of the physical condition, supposing no accident interrupt its regular course, is the length or the brevity of life.

"It is conceivable that the physical condition might be brought to a high degree of perfection, the mind remaining in a state but little fitted for enjoyment; because it is necessary to enjoyment that there be a certain development, occupation, and direction of the mental powers and affections: and the mental state may be neglected, while attention is paid to the physical processes. But the converse is not possible. The mental energies cannot be fully called forth while the physical condition is neglected. Happiness pre-supposes a certain degree of excellence in the physical condition; and unless the physical condition be brought to a high degree of excellence, there can be no such development, occupation, and direction of the mental powers and affections as is requisite to a high degree of enjoyment.

"That state of the system in which the physical condition is sound is in itself conducive to enjoyment; while a permanent state of enjoyment is in its turn conducive to the soundness of the physical condition. It is impossible to maintain the physical processes in a natural and vigorous condition if the mind be in a state of suffering. The bills of mortality contain no column exhibiting the number of persons who perish annually from bodily disease, produced by mental suffering; but every one must occasionally have seen appalling examples of the fact. Every one must have observed the altered appearance of persons who have sustained calamity. A misfortune, that struck to the heart, happened to a person a year ago; observe



him some time afterwards; he is wasted, worn, the miserable shadow of himself; inquire about him at the distance of a few months, he is no more.

“THE DIVISION OF HUMAN LIFE into periods or epochs is not an arbitrary distinction, but is founded on constitutional differences in the system, dependent on different physiological conditions. The periods of infancy, childhood, boyhood, adolescence, manhood, and old age, are distinguished from each other by external characters, which are but the outward signs of internal states. In physiological condition, the infant differs from the child, the child from the boy, the boy from the man, and the adult from the old man, as much in physical strength as in mental power. There is an appointed order in which these several states succeed each other; there is a fixed time at which one passes into another.

“In Mr. Finlaison’s report, printed by the House of Commons on the 30th of March, 1829, there are six original observations on the mortality of as many separate sets of annuitants of the male sex.

“From an examination and comparison of these observations, it appears—  
1st. That the rate of mortality falls to a minimum at the close of the period of childhood. 2d. That from this point the mortality rises until the termination of adolescence or the commencement of adult age. 3d. That from the commencement of adult age the mortality again declines, and continues to decline to the period of perfect maturity. And 4th. That from the period of perfect maturity, the mortality rises, and uniformly, without a single exception, returns, at the age of forty-eight, to the point at which it stood at the termination of adolescence. These results clearly indicate that certain fixed periods are marked by nature as epochs of human life; and that at the date of the recorded facts which furnish the data for these observations, and as far as regards the class of persons to which they relate, the age of forty-eight was the exact point at which the meridian of life was just passed, and a new epoch began.

“The observation is founded on the large mass of 9,347 lives and 4,870 deaths. From this observation, it appears that, at the age of thirteen, the mortality out of a million is 5,742. At the age of twenty-three, it is 15,074, being 9,332 more than at the close of childhood. At the age of thirty-four, the period of complete manhood, it falls to 11,707, being 3,367 less than at the close of adolescence. At the age of forty-eight, the mortality returns to 14,870, all but identically the same as at twenty-three, the adult age. From the age of forty-eight, when, as has been stated, life just begins to decline from its meridian, the mortality advances slowly, but in a steady and regular progression. Thus, at the age of fifty-eight it is 29,185, being 14,315 more than at the preceding decade, or almost exactly double. At the age of sixty-eight, it is 61,741, being 32,556 more than at the preceding decade, or more than double. At the age of seventy-eight, it is 114,255, being 52,514 more than at the preceding decade. At the age of eighty-eight, it is 246,803, being 132,548, more than at the preceding decade.

During the first year of infancy, as has been shown, the mortality out of a million is 180,492. At the extreme age of eighty-four, it is 178,130, very nearly the same as in the first year of infancy. Greatly as the mor-

tality of all the other epochs of life is affected by country, by station, by a multitude of influences arising out of these and similar circumstances; yet the concurrent evidence of all observation shows that at this and the like advanced ages the mean term of existence is nearly the same in all countries, at all periods, and among all classes of society. Thus, among the nobility and gentry of England, the expectation of life at eighty-four is four years: among the poor fisherman at Ostend, it is precisely the same. M. Deparoieux, who wrote just ninety years ago, establishes the expectation of life at that time in France, at the same age, to have been three and a half years; and Halley, who wrote 120 years ago, and whose observations are derived from documents which go back to the end of the seventeenth century, states the expectation of life at eighty-four to be two years and nine months.

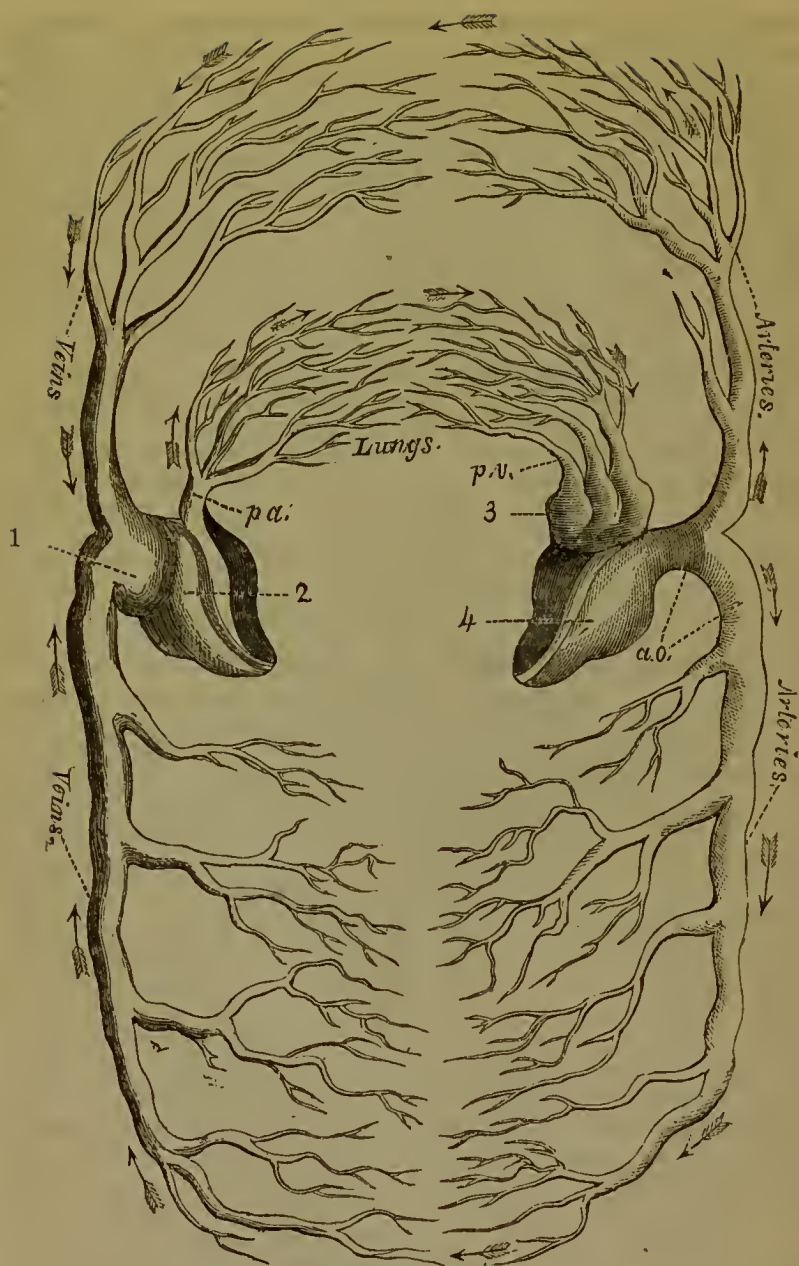
“From these statements, then, it is obvious, that from the termination of infancy at three years of age, a decade of years brings childhood to a close, during which the mortality, steadily decreasing, comes to its minimum. Another decade terminates the period of adolescence, during which the mortality as steadily advances. A third decade changes the young adult into a perfect man, and during this period, the golden decade of human life, the mortality again diminishes; while, during another decade and a half, the mortality slowly rises, and returns at the close of the period to the precise point at which it stood at adult age. Thus the interval between the period of birth and that of adult age includes a term of twenty-three years. The interval between the period of adult age and that when life just begins to decline from its meridian, includes a term of twenty-four years: consequently, a period more than equal to all the other epochs of life from birth to adult age is enjoyed, during which mortality makes no advance whatever. The term of years included in the several epochs that intervene between birth and adult age is rigidly fixed. In England, for example, the expectation of life at the present day, for the mass of the people, as compared with that of the mass at Ostend, which, as has been shown, is the same as that of the whole of Europe, is as follows:—

|                                   |                      |                      |
|-----------------------------------|----------------------|----------------------|
| At birth - $41\frac{1}{2}$ years. | At 32 - 32 years.    | At 57 - 16 years.    |
| At 12 - $46\frac{3}{4}$           | 37 - $28\frac{3}{4}$ | 62 - 13              |
| 17 - $41\frac{1}{2}$              | 42 - $25\frac{1}{2}$ | 67 - $10\frac{1}{2}$ |
| 22 - $38\frac{3}{4}$              | 47 - $22\frac{1}{4}$ | 72 - 8               |
| 27 - $35\frac{1}{4}$              | 52 - 19              | 77 - 6               |

“It should be borne in mind that the females of the mass exceed in duration the lives of the males at every age by two or three years.

The following may be assumed as the maximum average duration of human life, of both sexes collectively:—

|      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|
| 50   | 55   | 60   | 65   | 70   | 75   | 80   | 85   |
| Yrs. | Yrs. | Yrs. | Yrs. | Yrs. | Yrs. | Yrs. | Yrs. |
| 23   | 19   | 16   | 13   | 11   | 8    | 6    | 3    |



IDEAL PLAN OF THE CIRCULATION OF THE MAMMALIA.  
 (From Chambers Animal Physiology.)

In this *ideal* plan of the circulation in the Mammalia, the arteries and veins are *supposed* to be thrown into continuous chains, with the capillaries as their connecting links. In describing this plan, we shall commence with the veins (*left side*) which conveys the exhausted blood. It will be seen that they gradually unite, until those coming from above and those from below form two large vessels (*venæ cavæ*), that empty themselves into the upper cavity of the heart on the right side, called the *right auricle* (1). From the contraction or drawing together of this auricle, the blood easily passes downwards into the next cavity, called the *right ventricle* (2); and this, which is still more powerful, also in its turn contracting upon the blood, sends it through the vessel (*p a*) called the *pulmonary artery*. It is plain, however, that, if nothing hindered it, the blood could as easily go back to the right auricle, as forwards into the pulmonary artery; but this is effectually prevented by a valve that is placed between the right auricle and the right ventricle, and which allows the blood to enter, but prevents it going back. Another valve, which acts in a similar manner, is placed at the mouth of the pulmonary artery, so that the blood, by the successive contractions of the ventricles, is forced to go forward into the lungs. Here it becomes purified, and is sent by the *pulmonary veins* (*p v*) *right side*, to the *left auricle* of the heart, (3), to pass, as on the other side, into the *left ventricle* (4). This last is the most powerful of all the parts described, as it is required to propel the blood into the artery called the *aorta* (*a o*), and from it into the whole of the body. Valves are placed on the left side, between the auricle and ventricle, and at the mouth of the aorta, which have a similar action and appearance to those on the right side. Those between the auricles and ventricles are called cuspid, that is, pointed valves; on the right side, from having three points, tricuspid; on the left side, from having two points, bicuspid. Again, those at the mouths of the pulmonary artery and aorta, are, from their shape, called semi-lunar valves.

From the description given, it must be plain that the office filled by the heart, with its accurately-working valves, is essentially that of a forcing-pump. And with what inimitable precision and regularity does it perform this all-important duty! Unweariedly during the whole term of a long life it sends out daily its 100,000 waves of healthful fluid to refresh and renovate every corner of the system; and small as each wave may be individually, the aggregate amount is enormous. Thirteen thousand pounds of blood pass out of the left ventricle of the heart of an ordinary man every twenty-four hours. But the aorta of man is not an inch in diameter, whereas the aorta of a whale, the skeleton of which is exhibited in Edinburgh, was three feet two inches in circumference. Well, therefore, might Dr. Paley say, that the circulation is a serious affair in such an animal. "The aorta of a whale," says he, "is larger in the bore than the main pipe of the water-works at London Bridge; and the water roaring in its passage through that pipe, is inferior in impetus and velocity to the blood gushing through the whale's heart."

## THE DIET OF MAN.

*From Dr. Mann's Guide to the Knowledge of Life; Jarrold & Sons, London, 4s.*

"Food is taken by man to support the waste of his body, and to keep up its heat.—Every vital action, that is performed in the animated frame, is effected at the expense of some portion of its structure. It is wasted by its own actions, as surely as the moving machine is worn away by its own operations. Hence, new structure has to be built up as fast as the old is destroyed, and the material of this new structure is furnished from time to time, as it is required, by the introduction of food. But, in order that the



vital actions of the human body may be effectually carried on, it is necessary that its organs shall be kept in a temperature that is warmer than the atmosphere. This warm temperature is provided by a constant, slow consumption of fuel within the frame. The fuel so consumed is furnished from time to time by the food.

*"The different organizable principles, contained in the food, possess different powers of nourishing and warming.*—Some kinds of food, therefore, *nourish* more than others; or, in other words, repair the waste of the organs more promptly. Other kinds *heat* more.

*"The glutinous principles contained in food, are the most nutritious.*—Gluten, albumen, caseine, and lean meat, are all classed together as glutinous principles, in consequence of their being all nearly of the same nature. They all contain nitrogen, are of a highly plastic character, and are converted into organized structure in the living body.

*"The oily principles contained in food are the most heating.*—They are so, because they are almost exclusively composed of carbon and hydrogen, which are both very combustible elements, and convertible into carbonic acid and water, with the production of free heat, by union with oxygen. The oily principles of the food are chiefly consumed in the system as fuel, and in the heating service of the body, without having first been made into organized structure.

*"The oily principles of the food are, however, nutritious in a degree.*—The illustrious German chemist, Liebig, asserts that the plastic nitrogenized principles of the food are exclusively nutritive, and the other principles exclusively combustible, and employed in the heating service. There is no doubt that, in the main, these diverse principles are thus differently used; but it is also now known that some heat is set free when the plastic principles of the structures are decomposed, although very much less in amount than that which is procured from the burning of the same quantity of oil; and so, again, that oil is used in some constructive purposes, although generally of much less service *plastically* than the nitrogenized compounds. The heating power of the plastic principles is instanced in the case of carnivorous animals, which keep up a high temperature within their frames, when they get nothing but lean flesh for their food. The constructive power of oil is shewn in the influence of cod-liver oil in restoring the wasted flesh of consumptive people. The fact, therefore, is, as stated above, that the glutinous or plastic principles of food are the *most nutritious*, and the oily principles the *most heating*.

*"The farinaceous and saccharine principles of the food, are chiefly heating, although in a less degree than oil.*—'Farina' is the Latin name for 'starch,' and 'Saccharum' the Latin name for sugar. Hence sugar and starch are termed farinaceous and saccharine principles. Sugar and starch are less combustible than oil, because there is already some oxygen combined with their combustible elements—carbon and hydrogen. They are converted into oil in the system, before they are burned, as will be hereafter seen.

*"The glutinous, oleaginous, and farinaceous principles are all necessary for the sustenance of life.*—When animals are fed for a long time on any one of

these principles alone, they die of starvation, just as they would if they were kept from food altogether.

*"The best diet is that which combines these several principles in itself, in the proportion in which they are required by the system.*—In most of the substances employed as food, these several principles are naturally combined together, but some foods have more of the one than of the other. Hence, some foods are more nutritious, and others more heating, according to their constitution. 'Diet' means food, viewed in relation to its character and effects on the living body. The word is derived from the Greek term '*diaita*,' which signifies 'rule of living.'

*"All the several principles are contained in milk, in the relative proportions required for the formation of a perfect food.*—Milk is nature's own compound, prepared for the support of young animals, before they undertake the business of foraging for themselves. It contains all the principles that are needed for nourishing and warming their frames. It has in itself glutinous matter, oil and sugar, (the representative of the farinaceous principle). The glutinous principle is caseine, which is separated from the other ingredients in the process of cheese-making. The oil is churned out of it as butter. The sugar is held in solution in the whey, and is at once detected by the sweetness of the taste. One hundred ounces of cow's milk consist of ten ounces of solid matter held diffused in ninety ounces of water. Of the ten ounces of solid matter, about two and a half are glutinous matter (cheese), and seven and a half butter and sugar (oleaginous and saccharine principles). Human milk contains a large proportion of oil: there are in it two ounces only of cheese (caseine) to every eight ounces of butter. Hence, it may be inferred that four to one are about the proportions in which the combustible and the plastic constituents need to be mingled in the food of man.

*"Wheat-flour contains glutinous and farinaceous principles, mingled together in very nearly the same proportions that similar principles are in milk.*—Wheat-flour consists of starch and gluten mixed together, in the proportions of four and a half of the former, to one of the latter. It differs from milk chiefly in the solid and crude condition in which these stored-up constituents are, and in the absence of water. When water is added, it is sufficient for the support of human life for considerable periods of time. Hence, bread is in such general use among mankind, and hence, in strict accuracy, it deserves the name that is commonly given to it, of 'The Staff of Life.'

*"Many of the common admixtures of different kinds of food are judicious, on account of their mingling together opposite principles.*—Thus butter is added to bread, because in flour the combustible principle is in the fixed state of starch, which requires to be converted into oil before it can become serviceable. Potatoes and rice (which are principally composed of starch), are eaten with meat, because it is deficient in farinaceous matter. The addition of butter to bread augments its heat-sustaining powers. The addition of meat to potatoes increases their nutritive capacities. A mixed diet of bread, butter, meat, and potatoes, furnishes all the ingredients required by the animal frame, and hence possesses the sanction of science, as well as of custom.

*“Different kinds of diet are required by different habits of life.—*Under some circumstances, men need a more than usually *nutritious food*: under others, they need a more than usually *heating diet*.

*“Great exertion calls for very nutritious food.—*Since all activity is attended by waste of structure, it is clear that the more exertion there is made, the more nourishing material must be furnished to keep the organs in a working state; but this nourishing material must be of a plastic, rather than of a heating kind. If large quantities of oily matter were taken, under these circumstances, the system would become either oppressed with combustible matter, or with the heat resulting from its burning, instead of being strengthened for the increased labour. The best addition that can be made to the ordinary diet, to meet this requirement, is lean meat. One pound of meat contains as much plastic matter as two pounds of bread or four pounds of potatoes. Lean meat is the most nutritious, and the least heating of all the substances employed as food. A plentiful meat-diet has the same effect upon a hard-working man, that a corn diet has upon a hard-working horse; it fits him to bear the constant strain made upon his muscular structures, and it does this without overloading his body with combustible matter at the same time.

*“Absolute repose necessitates the employment of a chiefly farinaceous, and a very sparing diet.—*When very little exertion, of either body or mind, is made, the waste of the organized structures is proportionally slow; and, hence, very little plastic food is called for. The farinaceous materials, of the nature of rice, potatoes, and tapioca, then, contain as much direct nourishment as the inert system requires for its sustenance; and they have the further recommendation that they are, at the same time, not of a very heating nature, because their starch needs to be converted into oil in the system, before it can be burned, or produce heat.

*“Exposure to great degrees of cold is best borne, when a very oleaginous diet is used.—*The Esquimaux, who habitually brave the extreme cold of the Arctic winter, live almost exclusively upon seal-oil. Two ounces of oil produce as much effect in heating the body, when consumed as food, as an entire pound of meat.

*“Farinaceous foods are most suitable for hot climates and seasons.—*In the the hottest regions of the earth, the mean temperature of the air is not sufficiently high for the purposes of the animal body; hence, the internal furnace is kept burning in them, as well as in the colder climes. But less fuel, of course, needs to be consumed. Under these circumstances, starch forms a better fuel than oil, because it is less combustible and burns more slowly. Oil differs from starch, principally in containing ten times less oxygen; it therefore has a greater attraction or thirst for the corrosive element, in this degree, and of necessity gives out more heat, when burned. Two ounces of oil produce as much heat in the body as five ounces of starch; but the heat produced by the burning of the starch is also set free more gradually, because this principle has to undergo a preliminary process of conversion into oil, before it is ready for use. It is on this account, that the natives of India and China find rice so suitable an article to form the chief bulk of their food.



*"In temperate climates, the diet is best varied with the seasons.*—The remarks made in relation to the various heating and nourishing powers of different kinds of food, apply as much with regard to seasons, as they do with regard to climates. More oleaginous principles are required in winter than in summer. It frequently happens that persons who take cod-liver oil through the winter, in England, get so oppressed by it in summer, that they are constrained then to refrain from its use.

*"Animal food is not absolutely essential for the support of life.*—This may be inferred from the fact that there are animals which feed exclusively upon vegetable matters. The ox, that supplies beef to man, eats only grass and turnips. Many individuals of the human species take nothing but vegetables as food, and yet preserve vigorous health for long periods of time. There is no nutritious principle in meat, that is not also found, although in a more sparing and less condensed form, in vegetable substances.

*"A mixed animal and vegetable diet is the best adapted to the general wants of man.*—It is a debated question whether man is designed by Nature to feed on vegetable or animal substances. It is not difficult, however, to find a satisfactory answer to this. He is intended by Nature to live on both. He is *omnivorous* ('devouring all things') in the widest sense of the term. He eats, and thrives upon all kinds of food, and may be restricted to an exclusively animal or vegetable diet with impunity, provided only a due proportion of plastic and combustible principles are supplied, in the condition in which they are available for use. In tropical lands, man luxuriates in delicious, sugary fruits, and in other productions of the ground; in temperate climates, he mingles bread and meat in various proportions; on the wide prairies, he can get nothing but buffalo beef and venison; and in the dreary, arctic waste, fish and seal-oil are his sole resources;—yet, under all these varieties of circumstances, he still manages to keep his frame in healthy vigour, and fit for its work. Man, in reality, is enabled to exist upon a great diversity of food, in order that he may dwell in a great diversity of conditions; his omnivorous capacities have been conferred upon him, in order that he may 'subdue the earth,' and cover its surface, from the luxuriant tropics to the desolate poles, with his race. In civilized and densely peopled lands, where mouths multiply much faster than the natural productiveness of the soil, a mixed diet of animal and vegetable substances is invariably adopted, because, in practice, it is found to be both more economical and convenient. It proves to be easier to make the land yield an augmented produce, under the application of science to its culture, when that produce is taken out in mutton, beef, and grain, than when it is procured in the form of grain alone. Every possible advantage has then to be sought out and seized upon, in order that the rapidly increasing numbers of the people may be comfortably and sufficiently fed. But the employment of the mixed diet, by highly civilized races of mankind, has another very important advantage. It enables a larger quantity of plastic substance to be thrown into the system at any time, to answer a special service, without increasing, in the same proportion, the quantity of fuel present in the frame. It furnishes a means for strengthening the body of the hard-working man for extraordinary exertion, without its being heated in a cor-



responding degree. The natural food of the horse is grass, but so soon as the horse is taken from the pasture and set to drag heavy loads, it is found that its muscular powers must be sustained by the addition of a certain quantity of corn to its daily fare; for the corn has much more of plastic nourishment in it than an equal quantity of grass. Meat is added, for the same reason, to the toiling man's daily fare; that is, in order that the excessive waste of plastic substance, entailed by his labour, may be promptly and easily repaired. These remarks apply as much in the case of mental as of bodily exertion. The best physiologists are of opinion, that although there can be no doubt an exclusively vegetable diet is sufficient for the production of a full and perfect development of the bodily frame of man, it is equally clear that the addition to it of some animal food favours the formation of the highest power of mind.

### “ON THE FOOD OF INFANTS,

“By Mr. H. TURNER, *Homœopathic Chemist, Manchester.*

“An article on this subject in the last number of the ‘British Journal of Homœopathy,’ has reminded me, that I ought to make public, a method I discovered many years ago, of preparing what has been repeatedly mentioned as a desideratum, viz., *a food for infants, which shall contain all the constituents of the mother's milk in their proper proportions*, and which shall be at the same time cheaply and easily prepared.

“The best food for infants is undoubtedly that which nature herself provides, viz., the child's own mother's milk; but sometimes mothers have no milk, or not sufficient for the child's nourishment, and in some cases it is expedient for other reasons that she should not nurse. In such cases it is usual to seek for a wet-nurse, who generally turns out a nuisance in the house, barely endurable. If the nurse has lost *her own child* of nearly the same age as the one she is engaged to suckle, her health good, and all parties satisfied, then nothing can be said against the arrangement, but if her offspring is living, and if it has to be taken from her, and deprived of its own proper nourishment, an unnatural and cruel wrong is inflicted on the poor helpless and innocent sufferer; and if, as is often the case, the selected nurse is a mother but not a wife, the encouragement to immorality is so direct and positive, as to be shrunk from by all right minded persons, and vice is rewarded with a good home, good living, and little or no work. In other cases the infant is ‘dry nursed,’ or ‘brought up by the hand,’ that is, if it should not happen to be killed by the process, as is too often the case, and then of course it is not ‘brought up’ at all.

That improper food is the cause of much infant mortality there cannot be a doubt, and if there were, it would be removed by a Report\* lately printed and circulated by Drs. Whitehead and Merei, giving the results of their most careful and painstaking investigations into the causes of mortality and diseases among children. This report shows that more than

\* CHILDREN'S DISEASES: First Report of the Clinical Hospital for diseases of Children, Manchester, containing an account of the results of the first 520 patients treated by A. S. Merei, M.D., and J. Whitehead, M.D.

50 per cent. of children in Manchester die before they reach the age of five years, and of these by far the greater part die during the first year, the deaths being in the following relation to ages:—

“Under 12 months, of 146 patients, 20 died, or 14 per cent. nearly.

“From 1 to 2 years, of 105 patients, 8 died, or  $7\frac{1}{2}$  per cent.

“From 2 to 3 years, of 65 patients, 4 died, or 6 per cent.

“From 3 to 4 years, of 53 patients, 2 died, or 4 per cent.

“Above the age of 4 years to the 13th, of 161 patients, no deaths had occurred.

“The same report shows that ‘70 per cent of the deaths occurred from abdominal diseases; 72 per cent. were partly cases of deranged digestion, in most instances combined with diarrhoea, of either dietetic or atmospheric origin.’ It also shows that the number of badly developed children amongst the ‘hand-fed’ was *six times as great* as amongst those fed with the milk of the breast alone. Here then we have an appalling amount of mortality, disease and imperfect development, arising from errors in the diet of infants. The question is—*Can it be avoided?* And the reply—*It can.* How?

“If we examine the constituents of the human milk and compare them with those of the cow, we shall find that they differ considerably. The following table shows the composition of different kinds of milk, as given by Henry and Chevallier.

| Constituents.        | Milk of the |        |        |        |        |
|----------------------|-------------|--------|--------|--------|--------|
|                      | Woman.      | Cow.   | Goat.  | Ewe.   | Ass.   |
| Caseum ... ..        | 1.52        | 4.48   | 4.02   | 4.50   | 1.82   |
| Butter ... ..        | 3.55        | 3.13   | 3.32   | 4.20   | 0.11   |
| Sugar of Milk... ..  | 6.50        | 4.77   | 5.28   | 5.00   | 6.08   |
| Various Salts ... .. | 0.45        | 0.60   | 0.58   | 0.63   | 0.34   |
| Water ... ..         | 87.98       | 87.02  | 86.80  | 85.62  | 91.65  |
|                      | 100.00      | 100.00 | 100.10 | 100.00 | 100.00 |

“From the above it will be seen that the milk of the cow differs from that of the woman, in this principally, that it contains less sugar of milk and more caseum. The excess of the latter may be got rid of by precipitating with rennet, but this is a very troublesome process, and is open to other objections which is not needful to notice, as I am about to suggest a much simpler method of accomplishing the end.

“It is obvious that by diluting the milk with water we can lessen the relative proportion of caseum, and by previously dissolving sugar of milk in boiling water in the proper proportions, and diluting fresh cow’s milk with it, we accomplish the two objects of lessening the relative quantity of caseum, and increasing the relative quantity of sugar of milk at the

same time. The following formula will give the results as nearly as is necessary for practical purposes, and it has the sanction of experience.

"Dissolve one ounce of sugar of milk in three-quarters of a pint of boiling water, and mix with an equal quantity of good fresh cow's milk; let the infant be fed with this from the feeding bottle in the usual way. Always wash the bottle after feeding, and put the teat into cold water, and let it remain until wanted again.

"The water in which the sugar of milk is dissolved should be thoroughly boiled to ensure its complete solution, and also to expel the air, which might cause flatulence.

"If the child requires to be sucked in the night, a little of the prepared milk may be warmed in a pipkin by means of a spirit lamp. The occasional addition of a little fresh cream to the above food will be beneficial to the child.

"I have had one of my own children fed as above from birth, and the results were all that could be wished. I have also recommended it in many other cases, and it has always been carried out with satisfaction.

"The SUGAR OF MILK mentioned above can be procured from any of the Homœopathic Chemists."

## THE WATER-CURE IN PREGNANCY AND CHILDBIRTH.

BY JOEL SHEW, M.D., NEW YORK.

(*Skeel, Pinner's Hall Court, Old Broad Street, London.*)

"PREGNANCY is always attended with more or less excitement of the system, an excitement which bears some resemblance to a state of fever. There is also a greater proneness to fevers, even from slight causes, now than at other times. Hence the necessity of avoiding, as far as possible, all such causes; and hence also, the necessity of exercising the greatest care, in regard to diet and drinks. Too much food, and that which is too exciting, will cause more harm in pregnancy than at other times, from the greater tendency to fever. The common belief among women is, that more food is needed during pregnancy than at other times, because the food goes to furnish nourishment for two instead of one, that is, for the mother and the child within her. 'It is therefore,' says Dr. Dewees, 'constantly recommended to eat and drink heartily; and this she too often does, until the system is goaded to fever; and sometimes to more sudden and greater evils, as convulsions or apoplexy.'

"If, instead of full diet, women in pregnancy will but try the plan of eating less food, even of becoming very abstemious, they will most assuredly find that they get along better, suffer less from plethora or fullness, and enjoy greater comfort of body in every respect.

"There is a mechanical reason—one which females themselves can best understand—why less food should be taken during pregnancy than at other times; the abdomen is more full at this period; much more so toward the end of pregnancy. Hence it is that at this time a full meal will cause a greater sense of fullness, and in every respect a greater degree of discomfort, than when pregnancy does not exist.

"Heart-burn is not unfrequently one of the first unpleasant symptoms that women experience after becoming pregnant. This sometimes becomes very distressing, and difficult to manage according to the ordinary modes. 'It is generally,' says Dr. Dewees, 'very distressing and very difficult to subdue.' He had known large and repeated doses of the alkalies given with scarcely any temporary alleviation, and much less, permanent benefit.

"The great cause of heart-burn in pregnancy as well as in other cases, is acidity of the stomach; and acidity of the stomach comes from improper food. Very seldom, indeed, can a pregnant woman be troubled with heart-burn, acidity of the stomach, or vomiting, if the dietetic and other habits be regulated according to principle. Pregnant women, in this country of abundance, generally eat a great deal too much food. They have also too little exercise in the open air. Some, indeed, have too much exercise, as in doing household work; but more are injured by doing too little than too much. But in this country ninety-nine of the one hundred *eat too much food while in the pregnant state.*

"To cure the heart-burn, let the woman, when she first experiences it, at once desist in the quantity of food. If she rises in the morning and finds the symptom upon her, she may be certain that digestion has gone on badly the day previous, and that the stomach contains portions of the undigested aliment which has passed into the acetous fermentation, and thus causing the difficulty she experiences. What is to be done in such a case? Will the introduction of another portion of food into the already disordered stomach make matters any the better? Certainly not, except for a short time. When the stomach is goaded on by a new meal, the individual may feel the better for half an hour; but, other things being equal, it in the end only makes the matter worse. Fasting a meal or two, with water-drinking for its tonic effect, is the best possible means. The stomach thus has time to regain its vigour, and food taken in moderation, subsequently, will then be found to agree perfectly well. It will here also surprise any one to learn how small an amount of food is really necessary, with water-drinking, to sustain the strength.

"Nausea and vomiting are frequent occurrences during the early months of pregnancy. Various conjectures have been put forth concerning the causes of these symptoms, one of which is, that they act in preventing plethora, or too great fullness of the system. But it may be asked, if this is so, why do they not continue in the later months of gestation, when plethora is still more prejudicial than in the early months? The plain truth in the matter appears to be this: those persons who are feeble and have depraved health—those who sleep upon feather beds, who are inactive in their habits, who drink tea and coffee, and subsist on fine and concentrated food, such as is almost certain to cause indigestion, and to keep up a state of constipated bowels—are by far the most apt to suffer from nausea and vomiting in pregnancy. Those who have good constitutions, and live consistently in all respects—practising daily bathing, water-drinking, &c.—are troubled but very little with these symptoms.

"During the early months of pregnancy, there appears to be a greater tendency to constipation than in the latter months, a fact which is the



direct reverse of what we should expect from *a priori* reasoning. But during the whole period, constipation is more apt to occur than at other times.

"Constipation is exceedingly common among all classes of females in this country at the present day. The American people have such a predilection for fine food, it is a hard matter to make any great change in this respect. It is in the dietetic habits more than in any other that we are to look for the causes of this evil.

"Superfine flour is, I hold, the greatest of all causes of constipation. I know tea and coffee, which are astringent articles, have a tendency to cause this condition of the bowels; and the same may be said of idleness, and physical inactivity; but too great richness in food—and superfine flour is the article most consumed in this—is the great cause of constipation. Our country abounds with it every where. By our numerous railroads and canals, superfine flour is transported from one end of the country to the other, so that in large districts where formerly the people were in the habit of eating coarse bread, as of rye and Indian, and were consequently more healthy, they now use the superfine. Even a beggar would sneer at one for offering him brown bread.

"Constipation, common as it is every where among females, is still more common in pregnancy. This arises, first, from the pressure of the enlarged womb upon the lower bowel; and second, there being a new action set up in the uterus, there is, as a natural consequence, a greater tendency to torpor in the bowels. But the principal cause is that of the pressure.

"This condition of the bowels induces of itself numerous other difficulties. Headache is often brought on solely by constipation; that is, in many cases we remove the constipation, and the headache is sure to leave with it. Sickness of the stomach and vomiting are always aggravated, and often caused by it. The same also may be said of heart-burn, palpitation, and fainting. Sleeplessness, and in fact almost every one of the disorders of pregnancy, may be said to be either caused directly or greatly aggravated by constipation of the bowels. Even miscarriage has been known to be induced by it.

"Some persons have gone almost and incredible length of time without any movement of the bowels. A whole week is not uncommon. Dr. Dewees mentions a case of fourteen days, and no doubt there have been those who have gone one to three whole weeks.

"What have we to do in order to cure constipation of the bowels? Does not every person of common sense understand at this day, that the more we dose the system for constipation the more we may? Let those answer who have tried these things. Always, other things being equal, the more we take drugs for constipation the worse it grows. We must therefore look to some other means of cure.

"We need here only mention, in general terms, that constipation in pregnancy is to be cured just the same as constipation in any other case. Brown bread, fruits, and vegetables, with a very moderate use of milk, if the patient desires it; regular exercise, the hip bath, wet girdle, injections of cold water, or tepid, if that is preferred—these are the means to be

used. The brown wheat or rye mush will be found most excellent. No woman, if she can have brown bread, and occasionally an injection, need ever suffer from constipation of the bowels.

"Sometimes the reverse of constipation occurs during pregnancy; namely, diarrhœa. This also not unfrequently alternates with constipation. Constipation, however, is the most frequent system.

"Singular as it may appear, diarrhœa should be treated on the same general principles as constipation. Fortify and invigorate the general health, observing at the same time a correct general regimen, and either symptom disappears. In diarrhœa, the hip bath, often repeated, the wet girdle, and cold injections, taken as often as there is any disposition for the bowels to act, are effectual means. The diet should be regulated on the strictest principles. If a diarrhœa is very severe, entire abstinence from all nourishment except water for a day or two, is a very salutary remedy. Food should then be taken with the same precautions as in nausea and vomiting.

"*Pruritus pupendi*, or itching of the genital parts, becomes sometimes a most troublesome and distressing complaint in pregnancy; so troublesome, indeed, as utterly to set decency at defiance. Cases under the ordinary modes of treatment, have been known to be so severe as to compel the lady to remain in her chamber for months.

"The causes of this affection cannot always be ascertained. A want of proper cleanliness is no doubt often one of the principal sources of it. But shallow hip baths of cold water from a well, persevered in, will be found sufficient in every case; use them every two hours for two minutes at a time.

"Mastodynia, or pain in the breasts, is more common in the first pregnancy. Compression by clothing may cause the difficulty. Washing the parts with cold water, and wet bandages or cloths worn upon the parts, are the means to be used. If the pain is of a spasmodic kind, it may be best in some cases to use warm fomentations.

"Incontinence of urine is quite apt to occur toward the end of pregnancy. It arises often from the pressure of the child upon the neck of the bladder. There is a notion with some of the 'old women,' that incontinence of urine is an indication of good labour. This difficulty cannot of course be altogether remedied; the cause cannot be removed. It may be lessened, however, by short and frequent hip baths, wet bandages, and cold bathing. Drinking soft water instead of hard, will also be found to have a good effect in all difficulties of the bladder whatever.

"Blisters are always liable to bring trouble upon the urinary organs, but more particularly so in pregnancy. The system is then in a more excitable or impressible state. Strangury in pregnancy is a very distressing and untoward symptom when it follows the use of blisters. Dr. Dewees had known cases where entire retention of urine followed the use of blisters, so obstinate that it could only be relieved by the catheter, causing a distressing inclination and violence of effort only to be surpassed by labour itself.

"Retention may also come on from other causes. As to the treatment

it can be very seldom indeed necessary to resort to the use of the catheter for draining off the urine, if cold hip baths, cold foot baths, and even the cold general bath, if necessary, be sufficiently persevered in. Cold has a truly wonderful effect in causing the flow of urine.

Cold bathing, for its tonic and constringing effect, has for centuries been recommended as a most valuable means for preventing abortion. In pregnancy, the same general principles should be observed in fortifying and invigorating the general health as at other times. No violence should be done to the system. A general bath in the morning, cool or cold, according to the individual's strength; a hip or sitz bath of five or ten minutes duration, two or three times a day, and an ablution with water, not too cold, on going to rest, will ordinarily be sufficient for the daily routine of treatment in those cases where there is tendency to abortion; such a course is in fact good at all times. The wet girdle, elsewhere explained, will often be of advantage; but to make it a tonic or strengthening application, it should always be under these circumstances, great care must be taken that it does not become too warm. This is very apt to be the case in warm weather. It must then be often changed and re-wet. If it becomes too hot, it weakens the system instead of strengthening it, thus tending to cause the very difficulty it is intended to prevent. 'Injecting cold water into the vagina, twice or thrice a day,' says Dr. Burns, in his work on midwifery, 'has often a good effect, at the same time that we continue the shower bath.' And this writer also observes, 'that when there is much aching pain in the back, it is of service to apply cloths to it, dipped in cold water, or gently to dash cold water on it, or employ a partial shower bath by means of a small watering can.' Water, let it be remembered, is the greatest of all tonics to the living system.

"*Sleeping upon feather beds and in overheated rooms* has much to do in causing abortions. People ought never to sleep on a feather bed, unless, possibly, very old and feeble persons who have long been accustomed to them. In such cases it might not always be safe to make a change in cold weather suddenly. But for a pregnant woman to sleep on a feather bed is one of the worst of practices. And here also I must mention that feather pillows, as well as feather beds, do a great amount of harm. Even those who have emancipated themselves from the evils of feather beds, usually retain the feather pillow. It is a wise old maxim, 'to keep the head cool.' The head has blood enough, more than any other part of the system, to keep it warm. No person, not even the youngest infant, should ever sleep on a bed or pillow made of feathers. The animal effluvia coming from them is bad, and the too great amount of heat retained about the surface debilitates the system in every respect.

"*The vegetable diet* was observed by the celebrated Dr. Cheyne, of England, to have a great influence in preventing abortions. Milk, however, was generally used, which is in some sense animal food. A total milk and seed diet, as Dr. Cheyne terms it, was a most excellent means of preventing infertility and abortion.

"*Hæmorrhage from the womb*, during the months of pregnancy, is not necessarily attended with abortion. Great care, however, should be exer-



cised if hæmorrhage occur during this period, as there is then always great danger of losing the child.

"Abortion, as a general fact, is a more serious matter than birth at the full period. Hippocrates asserted that a miscarriage is generally more dangerous than a labour at full term. The reason of this is, the first is an unnatural occurrence; the second natural. In many instances, however, the abortion itself is of far less consequence than the condition of the general health which allows of such an occurrence. For the most part it is only the feeble and debilitated that experience abortions.

"Women who miscarry once are much more apt to do so again. The body, like the mind, appears to have a great tendency to get into bad habits; and the older the habit the worse it becomes, and the more difficult of control.

"It were better for very feeble persons not to place themselves in the way of becoming pregnant; certainly not until the general health has been attended to. And it is a fortunate thing for society that many feeble and diseased persons are wholly incapable of begetting offspring; otherwise the race would soon run out.

"More than one hundred years ago, the celebrated Dr. Cheyne remarked concerning abortion and its causes as follows: 'It is a vulgar error to confine tender-breeding women to their chambers, couches, or beds, during all the time of their pregnancy. This is one of the readiest ways to make them miscarry. It is like the common advice of some unskillful persons to such as have anasarca or dropsical legs, namely, to keep them up in chairs on a level with their seats, which is the ready way to throw up the humours into their bowels and fix them there. The only solid and certain way to prevent miscarriage, is to pursue all those means and methods that are the likeliest to procure or promote good health, of which air and gentle exercise are two of the principal. All violence or excesses of every kind are to be carefully avoided by the patient; but fresh air, gentle exercise, walking, being carried in a sedan or chaise on even ground, is as necessary as food or rest; and therefore is never to be omitted, when the season will permit, by delicate females.'

"When abortion is about to take place, the woman experiences usually for some time previously, 'a sense of weight and weakness in the loins and region of the uterus, followed by stitches of pain shooting through the lower part of the abdomen, back, and thighs.' There may be also bearing-down pains in the bowels, and frequent desire to pass urine. In connection with these symptoms—that is, at or about the same time—the discharge of blood commences. This is sometimes so sudden and rapid, that the strength becomes very soon exhausted to a great degree. If much blood passes, abortion is almost certain to take place.

"Bleeding, for its sedative, is often resorted to on these occasions. The application of cold, however, is the more effectual means when suitably made. Cold, as well as bleeding, is a sedative; and besides being as powerful as we choose to make it, has this great advantage over bleeding—it does not reduce the strength. It performs the effect without robbing the patient of that important agent, the blood.



"In any case of hæmorrhage from the womb, then, persons should, in the absence of a physician, at once resort to the application of cold. There is heat and feverishness in the system, be it remembered; under such circumstances it is impossible to 'take cold,' of which people are every where so much afraid. Cold wet cloths, often changed, should be applied about the abdomen, upon the genital parts, thighs, &c. Use plenty of cloths, and even doubled sheets, dipped in the coldest water. A piece of ice, wrapped within a cloth, is also often put up the vagina for a little time, to produce a chilling effect. Until the bleeding stops, it is next thing to impossible to do any harm with cold. Cold injections to the bowels and vagina, and when the patient is not too weak, the cold hip bath, are useful means. 'A rigid avoidance of every thing stimulating; a cool room; cool drinks; and light bed-clothes,' are recommended by Dr. Maunsel.

"After the bleeding has ceased, the patient should be allowed to rest, and she should be nursed in the most careful manner. For days and weeks, and, in some cases, for whole months, the greatest care must be exercised, lest a little overdoing, a little excitement, or some other untoward circumstance, may bring injury upon the patient.

"The following case of a clergyman's wife in this city, was given by herself for the *Water-Cure Journal*, some months since:

'MR. EDITOR—I feel that I am under obligations to you, and a duty I owe the public, if you think best, to make known the happy effects I received from following your directions, previous to, during, and after my accouchement last August. On Wednesday, the 23rd August, 1848, at half-past twelve, noon, I presented my husband with a fine boy, with comparatively little suffering. I had one of the best physicians with me, and although allopathie in practice, he did not interfere with your advice. After the birth of the child, I had wet towels applied around my hips, &c.; at two I partook of peaches and milk, with Graham bread; remained comfortable till six o'clock, when, with the assistance of my husband, being very weak, I got into a tub of water, and after being well bathed and rubbed, I found, on leaving my bath and investing myself with a wet girdle, that I could have walked across the room without assistance; but I merely walked to the bed, and soon sank into a sweet sleep, in which I remained until morning. The babe also slept all night without waking. The next morning, Thursday, the 24th, at six, I got up, took a bath, walked across the room to the rocking-chair, took my babe, and made him comfortable, for I thought I would not disturb him by dressing him. At twelve, twenty-four hours from the birth, I took another bath, and sat up till six, when I repeated the bath, and went to bed, and as I had eaten a very hearty dinner, I thought it best to deprive myself of supper. Friday morning, the 25th, I again took my bath early, had the windows of my rooms thrown open, and walked several times through them, and felt as well as ever, excepting a soreness across me, and weakness; had my bath at twelve; after dinner had some severe after-pains, but by constantly wearing the wet girdle, they were much alleviated, and soon ceased entirely.

'Saturday morning, the 26th, I again took the bath early, and exercised

about the room; and after breakfast, which consisted of tomatoes, boiled corn, and potatoes, I washed and dressed my infant without feeling the least fatigue. I sat up most of this day—ate beans and corn for dinner. Sunday, 27th, I was so well that all the family went to church, leaving me with the babe and my little boy, five years old.

‘When my child was a week old, I could go about the house, walk in the yard, and had read several volumes. I continued to take my baths and wear the wet girdle for six weeks, when I left them off on account of a journey I made to visit my parents in a distant city. I have delayed writing you to this time to see if we (the babe and myself) should continue in our favoured state, and I have the pleasure of informing you that my health still remains good, and our babe is as well and fine as the fondest mother could wish.

‘Now, when we take into consideration that we had no nurse, nor had I to call on my girl for assistance during the whole of my confinement, I think we may well ask ourselves the question, How has it happened, that what has been considered heretofore a serious, and even dangerous event in the mother’s life, should have all its terrors, pains, and sickness, often attended with fatal fevers, taken away, and reduced to a comparatively trifling affair? I answer, and my experience warrants me in answering (for I have had children before), *By the use of cold water*, applied in a judicious manner; a remedy equally accessible to the poor as well as to the rich—simple, vivifying, and effectual; and I hope and trust you will succeed in your undertaking, and have the happiness of conferring the same benefit on thousands of trembling, anxious mothers, that you have on your greatly obliged friend,

SARAH B.’

‘Dr. W. and wife arrived at our establishment, she expecting to be confined in two or three weeks. She could walk but little; going a short distance fatigued her much. Doctor Webster applied the water faithfully and exclusively during the attack of the erysipelas mentioned, so that she was gaining fast when she came. A worthy and so called intelligent cousin of hers in Providence said to Dr. Webster, the night of leaving, ‘*You are killing your wife,*’ and thought, no doubt, she would never return alive.

‘TREATMENT AT OYSTER BAY.—Rubbing sheet, of rain-water temperature, say about 70 degrees Fah., on rising in the morning, usually at about four o’clock. Then she walked in the open air, wet or dry, when it did not actually rain in torrents. She drank also some water always after the bath, during the walks and after returning to her room. This exercise in the open air, practiced moderately at first, together with the baths, proved a great tonic to the system. She walked at different times of the day, when the sun was not too hot, mostly mornings and evenings. In the hot part of the forenoon she rested on the bed, and generally obtained some good sleep. This, however, she could not have done had not the clothing been removed, as at going to rest at night. Persons wonder how it is that when they sleep in the day time they wake up so feverish and unrefreshed. Keeping the clothing on never does well in sleep.

‘Forenoon.—After resting, and from half an hour to an hour before

dinner, the rubbing sheet was applied as in the morning. Feet were washed at the same time. She in fact always stood in a tub having water in it two or three inches deep, of rain-water temperature. She was to wash the feet at any time when they felt hot and disagreeable; so also the hands and face.

*'Afternoon.*—The rubbing sheet toward supper time as before dinner. Was to keep up in the afternoon and avoid sleeping, so that the rest at night would not be disturbed.

*'Evening.*—At about nine o'clock, and on going to rest, the rubbing sheet and foot-washing as before. Hip baths, one or two inches deep, were to be taken at any time when there were itchings, heat, etc., causing a need for them.

*'Food.*—Vegetable food and fruits, with a moderate portion of good milk, constituted her diet. No other drink than water was used. The meals were taken betwixt six and seven A.M., twelve M., and six P.M. There was no eating between times as people are wont to do; appetite and enjoyment of food were remarkably good; no meals omitted.

*'REMARKS ON THE RUBBING SHEET.*—This was applied with good, strong, old-fashioned linen. Quite dripping wet, it was put upon the shoulders about the whole body in a sitting posture; moderate friction was made (*over* the sheet, not *with* it) for about five minutes. The body was then made dry with towels. A few times, when Mrs. W. felt very languid, Dr. Webster applied the sheet twice in succession. This always revived her very sensibly. When she had the erysipelas before coming to us, Dr. Webster usually poured water upon the wet sheet while it was yet upon the body, and after the rubbing had made it somewhat warm; and after this, rubbing was practised again to excite a glow.

*'Under the above treatment Mrs. W. gained strength remarkably; soon became able to walk two and a half miles in the morning. She slept in a large and well-ventilated room, and her rest was uniformly good.*

*'Confinement.*—The third of July was one of her best days. She slept remarkably well at night, even better than common, as if nature, in anticipation of the coming event, was recruiting her energies to the utmost. Rose at half-past four; then the pains commenced very slightly; took the rubbing sheet and an injection, and thought she would walk out; but the pains grew steadily worse till half-past eight o'clock, when her infant, a large and healthy male child, was born. The labour was very easy; almost nothing compared with the former one. In about three-quarters of an hour the after-birth was expelled. Wet towels were kept upon the genital organs, and the abdomen, and changed often enough to prevent their becoming too warm. So also common sense would dictate that a patient should not be too much chilled at such a time, and yet there is here a great amount of unnecessary fear respecting cold applications. There is incomparably more to be feared from the effects of feather beds, close rooms, bad food and drinks, bandages, etc., in general use.

*'After the birth, Mrs. Webster slept well a while, and at noon she had a thorough ablution as follows: In a hip bath-tub (a common wash-tub of middling size is good), a bucket of cold, soft well water was put, and then moderated with hot water about 70 degrees Fah. Dr. Webster aided her*



in rising, and she bore her own weight both before and after the bath. She sat in the tub for some fifteen minutes, a blanket being about the body; the whole body was thoroughly washed during the time; the water, she said, was exceedingly refreshing. Afterward the hands and face were washed in cold water.

'After resting half an hour she ate dinner with an excellent appetite, for she had had no breakfast. The meal was a very plain one, viz., a piece of brown bread toast, with a few good uncooked whortleberries. Gin sling, toddy, tea, coffee, and other slops which are brought into requisition on such occasions, have no place, it will be remembered, in our Water Vocabulary. After the bath, as well as after the dinner, our patient felt remarkably well, quite as much so as any one; now and then there were slight after-pains. She sat up at different times in the afternoon, being up and lying down alternately as she felt inclined, possessing too much knowledge and good sense to be carried away with the nine day whims of society.

'At between six and seven of this day it would have been well for Mrs. W. to have had another bath, but Dr. Webster being absent, it was omitted; then also a third bath between nine and ten on going to rest. Meal at evening same as at noon, with the exception of the bread being moistened with milk. After sunset she sat up two hours at least. The evening bath was as refreshing as at noon, and aided much in procuring good rest. The ignorant people may yet learn something of the good and the safety of these applications scientifically made.

'*Second day.*—Patient slept remarkably well until about two o'clock. Then there came on after-pains, and the infant made some noise, which circumstances together kept her awake part of the time. Here the bath should have been given, which would have prevented the pains, and caused good sleep. Very early in the morning she arose and took the ablution as the day before. She felt well and strong; walked about her room. We should have mentioned she walked also the previous evening. Breakfast same as the supper. After this she walked down stairs with a little aid from her husband, entered a carriage and rode with him a full hour and a half. This pleasant ride in the cool of the morning was to her exceedingly refreshing; she was not fatigued, only made better for it. Knowing it would be so was the reason of our directing it.

'Awhile after returning from the ride, she laid down and slept soundly. Before dinner she took again her accustomed bath. Dinner, green peas without butter or salt, with brown bread, and a few good raspberries uncooked.

'At evening, between six and seven, Mrs. W. again rode out. Was up more than two thirds of the entire day; experienced some pains; these were each time mitigated by the bath. The ablutions are performed regularly on rising, before dinner, before supper, on going to rest, and in the night time if the after-pains become troublesome. A good deal of friction with the hand at the time of, and after the bath. Injections of cold water, to which she has been accustomed, are used daily. The morning, before breakfast, is perhaps the best time. They may be taken a number of times during the day if the pains are severe. One or two pints may be used. If



the patient is very weak they should not be too cold, 70 degrees being a good temperature.

*'Third day.*—Mrs. W. slept not very well. Invalids seldom, if ever, sleep right well more than one or two nights in succession. She feels, however, remarkably well, and is gaining strength rapidly every day: bathes, sits up, walks, and rides as usual. She could now return home to Providence without risk, were it necessary for her to do so.

'When cases like the above in water-treatment are spoken of by friends of the system, objectors, especially the doctors, at once say, 'Did you never hear of poor Irish women getting up immediately and going to the wash-tub?' Let it be understood, now and ever, *we ask only that the rule of our cases be taken as the test.* We give such examples as are an *average* of our success under this treatment.'

"MANAGEMENT AFTER CHILDBIRTH.—The truly remarkable effects of water-treatment in enabling our patients to recover so soon from the effects of childbirth, meets with great opposition on the part of some of the medical fraternity. Falling of the womb, it is said, must often be the inevitable result of persons getting about so soon. It should be remembered, that this ealamity comes in consequence of *general debility*; and if we cause our patients to go about too much and too soon after childbirth, so as to cause a sufficient degree of general debility, then this result would necessarily follow such a course. But the truth is, the danger lies on the other side. Does not every mother who has been attended in the way of the old modes, know that some days after delivery, they become more debilitated than at the time of the birth? The reason by which to account for this is the bad treatment practised. Lying constantly in bed, even for a single day only, will make a strong person weak, nervous, and restless. How much more, then, if the practice is continued for days! In a properly managed water-treatment, the patient grows day by day more strong, and for this reason falling of the womb is not so liable to occur as in the old modes. There is far greater danger in the latter than the former.

"THE BINDER OR BANDAGE.—The universal use of the obstetrical bandage or binder after delivery, is practised on the assumption that nature is incompetent to do her own work. It is true that art must sometimes be brought to assist her in her operations, but such is not the rule. As the bandage is generally applied, it is almost certain of slipping upward, thus tending to cause one of the very evils—falling of the womb—which it is intended to prevent. Besides, it heats the body too much, thereby causing general debility, a greater tendency to after pains, constipation, and puerperal fever. If it is ever used, it should be only in those cases where the debility is very great, and then only a portion of the time. The constringing and invigorating effect of cold water upon the muscles of the abdomen renders those patients who use it, not only as good, but of a better form than those who use the common bandage. I speak from positive knowledge in this matter, not from mere theory alone.

"The common wet girdle, which is explained elsewhere, may be worn either a part or the whole of the time after confinement; and the same

general rules for its use apply here as elsewhere.—*See body-bandage, as at page 57, only have flannel-end instead of calico, wrung out of hot water.*

“AFTER-PAINS.—These are caused by clots of blood accumulating within the cavity of the womb. Persons of high nervous susceptibility sometimes suffer exceedingly with these pains; more even than at the time of labour. In such cases, bathing should be persevered in, hourly, if need be, until the pains are literally worried out. The cold rubbing wet-sheet is here an excellent remedy. Cold injections to the bowels are also good, and may be as often repeated as is desired. The bath by means of sitting in a wash-tub may also be employed.—*Sitz, page 49, safer.*

“SWELLING OF THE BREASTS.—There is necessarily more or less excitement of the system as the milk begins to secrete. The breasts and nipples should be kept perfectly clean, and should be washed at least two or three times daily in cold water. Nothing in the world is so good to prevent that troublesome affection, soreness of the nipples, as washing them often, both before and after labour, in cold water. If the breasts inflame, the heat must be kept down by pouring cold water freely upon them, and the use of the wet cloths. No poultices are so good as these. In the water-treatment, properly managed, we have never to encounter that most painful and troublesome affection, breaking or abscess of the breasts.

“Mothers cannot be too careful in keeping the breasts at all times well drawn.

“INJECTIONS AFTER LABOUR.—Some writers have advocated that the bowels should be kept in a quiescent state, if they be so inclined, as is often the case, for some days after labour. But this is not a good rule. To leave the bowels inactive, tends to cause feverishness—the circumstance most to be feared after the confinement. See that the bowels act at least once every day. The morning, before eating, is on the whole the most suitable time. But if after-pains are troublesome, the cold injection may be repeated often during the day. Injections on going to rest, often have a good effect as regards sleep.

“MANAGEMENT OF THE CHILD.—The umbilical cord should never be separated from the child until the pulsations of its arteries have entirely ceased. This will usually require not more than ten or fifteen minutes, perhaps generally not so long.

“Very soon after birth the child should be well washed in water of moderate temperature. About 70 degrees in summer, and 80 degrees in winter, will, I think, be as good a rule as could be given. If necessary, a little mild soap may be used. It is better, however, to get along without it. A little lard rubbed upon the surface many prefer; some get along without any thing but simple water.

“No bandage should be put about the abdomen of the new-born child. The practice of girding up infants until they can scarcely breathe, is a barbarism that is destined soon to die away. Some thicknesses of fine wet linen may from time to time be placed over the navel as a poultice, after it begins to become sore. The navel heals much sooner with the water dressing than with such as are generally used. The form of the

infant's abdomen, treated without the bandage, is, to say the least, as good as when treated with it. We repeat, the common practice of girding children after birth is a cruel one, that ought never to be tolerated.

"I do not believe in using very cold water for the daily ablutions of infants. It does no good to make them blue by bathing. An infant that is nursed properly, and kept from over-heated rooms, and all great changes and extremes in temperature, needs only bathing enough for cleanliness. A morning and evening washing, with at other times proper cleansing of parts soiled by the natural discharges, will, as a rule, be all that is required. No feather beds or pillows should be allowed for infants. The heat engendered by these always renders them more feeble and liable to colds."

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**DEATH FROM LACERATED FINGER.**—Mr. Samuel Witham, farmer and grocer, of Winster, aged fifty-seven, six feet two inches in height, weighing eighteen stones, or 252 lbs., of steady habits, while ploughing with a young horse, got his hand entangled in the chain, and severely lacerated the third finger of the right hand. He was attended by a cow doctor, and was under his treatment twenty days, but the wound becoming exceedingly painful, and constriction of the nerves coming on through his whole frame, a surgeon was called in on Tuesday, April the 13th. The surgeon seeing the desperate state of the case, very properly suggested a consultation with another surgeon, whose partner, an M.D., attended on the following day, the 14th. The physician quite approved of the surgeon's treatment of the case under the circumstances. The constriction of the nerves increased to such a degree that the patient was convulsed every few minutes, while the pain from the wound was excruciating; chloroform and opiates were administered to give ease and sleep without any effect; calomel and blisters over the back, and mustard plaisters over the thighs, until the skin was off. Thursday, the 15th, a little better. Friday, the 16th, much worse, pain severe, and the twitching of the nerves almost continuous; no sleep, chloroform had no effect. Saturday morning, the 17th, considered dying at six a.m. The patient asked the surgeon if he might have his legs in hot water, with a view to relieve the twitching; the surgeon gave permission, and this afforded some relief. About ten a.m., a friend who was attending the patient, seeing that some relief had been given by the leg bath, suggested a hot bath for the whole body. This gave great relief, and revived the patient, but the twitchings were still severe; they commenced in the legs, and shot up into the body, until the whole frame was quite stiff during the paroxysm. There was evidently some vital injury to the nervous system internally, which could not be subdued; lock jaw was momentarily expected to take place, but did not come on.

The patient was taken out of the hot bath, and put into bed, wrapped in blankets, and for the first time perspired profusely. The surgeon called while this was going on, and at the request of the patient gave permission for another hot bath in the afternoon, which was given about five o'clock. Still better and less pain, and a little more use in his limbs, but

the twitching still occurred at intervals of a few minutes, and the patient had great difficulty to swallow a tea-spoonful of liquid from constriction of the throat. At this stage of the case we heard of it for the first time, a messenger came over with a request from the patient, who was a personal friend of ours, to ask if we could do anything for him with our baths; we immediately went over the same evening, and took another surgeon to assist with his opinion of the case if needful, but not to interfere with the treatment of the surgeon who had the case in hand, and whose attention had been unremitting from the time he was called in. Had the surgeon been called in before the case was so desperate, there can be little doubt but he would have soon brought the patient through, as the patient was of temperate habits. When we arrived, at the request of our friend, we tried our usual plans in cases of wounds, and stopped any medicine being given, or opiates, or blisters. First, the body was rubbed over with a towel wrung out of tepid water. Then the wounded hand steamed; this gave immediate relief from pain. Then our plan of hot fomentation to the stomach and bowels, with hot pads and fomenting can, with the intention of stimulating the viscera, and soothing the nervous system; this was continued for two hours, and spirits of ammonia given, also mustard plaisters to the soles of the feet, still steaming the hand over a jug of hot water, covered with flannel. After two hours, again rubbed the trunk with wrung out towel, and put on chest compresses, and flannel and silk body bandages wrung out of warm water, spongio piline bottle to finger, steeped in warm water. The fomentations so relieved the system, that the patient could with ease drink some arrow root, and then, for the first time since the attack, he had natural sleep. He awoke easier, and took more arrow root, with a tea-spoonful of brandy in it; slept again, and in this way the night of Saturday was passed. We returned home early in the morning, and left one of our experienced bath men with him. Sunday morning, the 18th, hot water soaping all over, and another fomentation; better all day considerably. Fomentations again at night, and hand steamed, and got sleep; still the twitching of the nerves was not subdued. Monday morning same, and taking nourishment; we visited him on Monday evening, and he was so much revived, that he consented to be removed to our Establishment, at Matlock Bank, where he could have better attention than at home. He was accordingly removed in a close carriage, first having had a basin of sago, with a little brandy in it, mustard plaisters to the soles of the feet, the legs wrapped in flannel, and with a fomenting can filled with hot water to his stomach and bowels, and wrapped in blankets, he bore the journey so well, that he said on arriving he should be better for another such journey. At the Establishment the same treatment was pursued, the bowels and the kidneys acted well and the twitchings were soon confined to the legs only. On Wednesday morning, the 21st, about 2 a.m., he was taken worse, and we were sent for. Death appeared certain, spasms had come on, and the patient had resigned himself to die, and did not wish any more attempts to be made to restore him. This, however, we could not agree to, as long as life lasted. A spirit lamp was administered with some difficulty;



the effect was magical, he was soon as well as on the previous day, took nourishment and slept, and was free from all pain, and the twitchings rare and only in the legs. Thursday and Friday so much better, singing hymns and freely conversing with his friends, that even our surgeon then thought he would certainly recover. This improvement continued until the twitchings had entirely ceased, when on Sunday evening, the 25th, at half-past 9, after a natural motion of the bowels, he went into an easy chair and expired without any pain or convulsion, sensible to the last. The injury done to the nervous system by the morbid matter taken up from the wound was not to be overcome. When we took the ease the wound was quite dry, except in one or two places a glary liquid oozed out, no healthy granulations whatever; this state was soon altered. After twenty-four hours steaming the wound showed healthy matter. The effect of simply steaming wounds, and keeping moist warmth to them, as in the article on Wounds and Bruises, we have often seen has restored them to a healthy state when all plaisters, ointments, lotions, &c., were only aggravating the mischief. Our friend all the time was full of assurance that, whatever might be the result of his accident, though absent from the body he should be present with the Lord.

## A LETTER FROM AN ENGLISH PHYSICIAN IN LARGE PRACTICE.

S . . . . ., *March 15th*, 1858.

"DEAR SIR,

"I have received through our mutual friend your pamphlet, and your very kind letter. I beg to thank you for them both, but much more so for your kind invitation, which I will avail myself of at the earliest period I can. I am a great admirer of the principles of the water treatment, but am not practically acquainted, to any extent, with its application. My attention has lately been more directed to it, from having in the month of September of last year, contracted an attack of acute rheumatism, which has rendered me more or less incompetent for active duties since that time.

"I have a great horror of medicines, generally, although I have been engaged in their use and abuse forty-five years. My abhorrence, therefore, may fairly be traced to the result of my experience of their frequent inefficiency, and their more frequent misapplication. I preach to my patients as I practice for myself, the simple doctrine of 'go and wash in Jordan and be clean.' But this is not mystical enough for the many, and despite one's reason and conscience, we are often obliged to lend ourselves to (?) deceit, and to give what our patients believe to be a *medicine*, a something in itself inert to meet their belief in the mysterious value of physic. Where the water treatment is applied, as it is unfortunately often empirically, *and held out to be a specific for the cure of all diseases*, it is manifestly absurd; but where it is judiciously applied to properly selected cases, I believe it to be the most valuable medical agent we possess; but then, like all other remedial agents, its virtues must not be upset by un-

natural habits. In your Establishment you can do what we cannot in the houses of our patients. You can command and control their diet and their regimen; we can, in practice, only advise it; and this makes your water treatment, especially when practised in the Establishment, of so much the greater value.

Believe me, yours faithfully,  
J. D."

*J. Smedley, Esq.*

**SMALL POX.**—As soon as there is any appearance of the eruption, **wet** pack body with towel wrung out of water 90 deg., three quarters of an hour night and morning, or as often as the fever rises; after pack, if in a child a towel rubbing, at 80 deg., and put on wet body bandage; continue daily packing until the eruption is fully out, then only sponge the body night and morning, with tepid water 80 deg. If fever should recur again go on packing. This will carry the case through, giving barley water, cooling drink, as receipt in this book, or arrow-root, no flesh-meat.

**CASE.**—A gentleman, age about fifty-five, wrote to me in April from a town eighty miles off, saying he had inflammation of the lungs, and wished me to be ready with a surgeon on his arrival at my Establishment, to treat his case, feeling himself no doubt in imminent danger. When he arrived we found it a case of severe bronchial affection, with spasms that almost closed the throat. I immediately ordered a fomentation (pads and can) to the chest and round the throat as he was reclining on a packing bed, and the legs up to the calves in hot mustard and water; after this fomentation had been on one hour, wiped the parts with a towel wrung out of tepid water, then rubbed the parts dry, and laid on a strong mustard poultice round the throat, top of the spine and chest, as long as it could possibly be borne; then dry chest compress and throat bandage; this was six p.m.: at ten o'clock a hot mustard leg bath, wet throat pack, and spongio piline, chest compress with collar wetted with warm water, and wet flannel end body bandage, warmed the bed, and retired to rest. In the morning, hot soaping and tepid sponge; forenoon, eight minutes vapour, and sheet 70 deg., sitz bath 80 deg., ten minutes feet in hot water. This counter irritant treatment and determination of blood to the surface of the body, by fomentations and vapours, with total abstinence from animal food, soon relieved the patient, and in a short time brought him to his former state of health, to his great delight; and he had the advantage of not having his system saturated with calomel, not to be got rid of often for years.

**HOT SITZ BATH,** page 148.—A hot pad should be put over the back of the bath to lean the back against, as well as one over the chest.

**THROAT AFFECTION AND DIFFICULTY OF BREATHING.**  
—An elderly lady had for a long time been troubled in this way. A flannel wrapper wrung out of hot water was put round the throat every night, and a large roll of dry flannel over it; this was continued for a week, sponging the throat with water 80 deg. in the morning, and putting usual half-chest wet compress on with collar during the day, soon quite removed the complaint. If stubborn, mustard plaister on the throat and

kept red for a few days, with hot mustard foot bath at bed-time, will aid the fomentation.

**CAUTION TO THE DELICATE AND THOSE IN ADVANCED LIFE.**—It should always be borne in mind in the application of Hydro-pathy to the frame, that there is a certain amount of vital heat in everybody; some have a large amount, and can bear great changes without injury; others have less, and invalids have of course always a low amount of the *vis vitæ*, or power of life. This little may be washed out altogether, either by too great an amount of cold treatment extinguishing the vital heat, or by too much hot treatment relaxing the frame by over stimulating in another form; it is not the water that cures, but its beneficial effect in gently stimulating by cold, and by soothing with warm: but nature neither must, nor will be forced. The amount of life or vitality in the brain, considered in the changes which take place in a few hours, must be the guide for a judicious, safe, and effective application of this powerful agent. A lady, about sixty-five years of age, came in April, having practised something of the cold water treatment in the winter, and was surprised her breathing was becoming worse. I name this to caution such cases from using cold water in the winter, or where there is low power of reaction. Bed-rooms are often cold in winter, and especially of a winter's morning, and exposure in either sponging the body or the chest when the weather is cold, is certain to cause congestion in elderly or delicate subjects; it is better in such cases to have no such application until noon, and then be careful the body or the chest is exposed to the air as little as possible. The silk and flannel wet chest compress should be worn whenever, and as long as there is any oppression on the chest, and a six minutes vapour, with tepid sheet or rubbing after, will give relief and not weaken.

**OBJECTIONS AGAINST THE FREQUENT USE OF STEAM OR HOT WATER BATHS.**—There is an unfounded prejudice against the frequent use of steam or hot water baths, on the supposition that they are relaxing, enervating, and induce susceptibility to cold. Popular prejudices are not always to be set aside as foolish; for I believe in all cases, or with rare exceptions, there is some truth for their foundation. This is the case with respect to the manner in which hot baths are used in this country. A deep vessel, in which the body is immersed up to the neck, is used, filled with hot water. The bather, feeling it very comfortable and soothing, stops in often half an hour, or even an hour, relaxing every muscle and every organ of the body, and comes out without any application to cause re-action, as with our cold dripping sheets, &c. The system is quite unable to cause re-action from its own vitality, and does not get over the effects often for twenty-four hours. The same by steam or hot air baths. Now the practice of the Russians in their cold climate, and the Turks in their hot climate, is totally different. They find the steam and hot water baths highly beneficial, and so universally are they used in those countries as to become the rule with all classes. Hardier people do not exist.

Why do not our scientifically-educated men open their eyes to the



principles of such bathing? They know both Russians and Turks all and invariably recognise the necessity of applying some cold stimulating application to restore the power of the skin, and stopping the weakening process of perspiration when the object has been attained of drawing out matter from the sebaceous and other glands, and soothing the nervous system. This is never ordered by the medical professor in this country, and the hot baths which if applied on principles recognising the nature of the human frame would be of incalculable service, are more often and almost always injurious.

I do not claim for Hydropathy any new discovery in the application of water, everything that the best Hydropathists have prescribed is older than history, and we see whole nations practising Hydropathy; but in our boasted wisdom we have looked upon the Russians as stark mad in rolling in snow after a hot bath, and believing it is a process only fit for such madmen as the Emperor Paul, or such half-animal, half-human beings as his subjects; and in the case of the Turks, as only for the gratification of their sensuality. We are egregiously in error in both; and no doubt both Russians and Turks look upon us as rather an unclean set of beings, when they hear vast numbers of Britons are never entirely washed from the time the midwife cleanses their little bodies when they come into the world until the time the layer-out of their corpse washes it for interment. What is the New Zealanders' remedy? For cold or fever they dig a hole in the earth, put in wood and set it on fire, and upon the wood flat stones; when the fire is out, the patient goes into the hole, with a calabash of cold water; the hole is covered with boughs and sods, the patient sprinkles cold water on the hot stones to make a good steam bath; after a while the cover is removed and his friends above douche cold water over him. Here is Hydropathy, and how old history cannot tell.

The kingdom is in the hands of the "*legally appointed*," and it has not been the practice of their forefathers in the profession from time immemorial to depart from the London Pharmacopeia and the Materia Medica, which they have sworn to practise by; and besides, to have the reproach of innovation and adopting *any* of the practices of such low barbarians as the candle and oil-eating Russians, or stupid automaton Turks, is not to be thought of by the enlightened College of Physicians. Nevertheless, I maintain that the steam and hot water baths are, when judiciously applied, of incalculable benefit, both in health and disease. In my own person I experience it continually. I could not go through the almost night and day work, mentally and bodily, as I do, and with but a slight frame, if I did not take a hint from the before-named barbarous people. When fatigued, and, to use our expressive phrase, all but "done up," morning or at bed-time I get a six minutes steamer, and cold sponge, or cold dripping sheet, or cold shallow bath; and if I have a good deal of work before me, I put on wet body bandage, with calico or flannel end, and wear it till afternoon. I get a hot sitz as at page 148, six or eight minutes, and similar cold applications; or hot shallow, as at page 321, so different from the deep body of hot water in ordinary baths. I find all these baths strengthening, invigorating, and *never relaxing*.

The public baths lately erected at Derby are a disgrace to the profes-



sional men who have had the direction of their construction. The deep earthenware baths are positively dangerous; for if a bather becomes faint in one of those absurd *wells*, he could not of himself get out, and might be drowned if an attendant is not on the spot; the bather in them can neither lie at ease nor in any other position, but *they are baths*, and according to rule, and that is enough. I was at the expense of an advertisement in the Derby newspaper when these baths were projected, inviting inspection of my Hydropathic Establishment at Matlock Bank, within two or three hours' journey to Derby and back, but no notice was taken of it. Money enough to have made bathing accommodation for all the population of Derby was wasted in a first attempt to erect baths. The money that has now been expended will give only a fraction of the population opportunities of cleansing their skins, and making them wholesome company. Properly applied, on Hydropathic principles, it would have done for every inhabitant of the town.

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COMPRESSED AIR BATH I have named at page 84. Since that article was written I have received a pamphlet from Dr. Macleod, of Ben Rhydding, and I think it may interest the public to hear the doctor's statement of the principles of his bath. The pamphlet is entitled, "Residence at Ben Rhydding," published by Webb, Millington, and Co., Wine Office Court, Fleet Street, London, 44 pages. The following are extracts:—

*Ben Rhydding, Otley, Yorkshire, October 24th, 1857.*

"DEAR SIR,

"You wish me to give my opinion of the Compressed-Air Bath, and to state in what diseases I find it to be decidedly of service, also to give you a short account of my treatment of consumption, chronic bronchitis, and asthma, for insertion in your work on Ben Rhydding. I gladly do so. I am anxious that the efficacy of the Compressed-Air Bath, as a curative agent, should be brought more fully before the public than it has yet been; and I am happy to have an opportunity of pointing out the distinctive merits of my treatment in the diseases just mentioned.

"I have now had the compressed-air bath in full operation for nearly eighteen months; and on an average, during that period, twenty patients, all very seriously ill, have been daily subjected to its influence. This bath has a most powerful effect in stimulating and strengthening mucous membranes, especially that lining the nostrils, fauces, windpipe, and lungs. It has at the same time a soothing effect on the system, removing irritation, diminishing the rapidity of breathing, and lowering the pulse. It powerfully assists in removing congestion, and in stimulating glandular organs to action. It is very efficient in subduing nervous palpitation of the heart. I have found it of great value in curing deafness, occasioned by an affection of the eustachian tube, or by a deranged state of the membranes of the ear itself: and its power is very marked in overcoming the stoppage of the monthly periods. Indeed, with regard to the latter effect, experience leads me to consider the compressed-air bath to be the most powerful curative agent we possess for restoring, and that even in the worst cases, this natural secretion. I find the compressed-air bath to

be very serviceable in inveterate chronic jaundice. In this disease the skin is of a pasty yellow colour, the conjunctiva of the eyes strongly bilious, and all the actions of the organism are torpid, and badly performed. It seems as if the increased quantity of oxygen taken into the system by this process causes increased waste, and gives increased stimulation and vigour to the liver and to the other abdominal viscera. I shall refer to only one more complaint in which I have found the air-bath to be of great service—chronic headache, arising, especially in youth, from over study. This distressing affection, which frequently prevents young men for years from pursuing their studies, depends entirely upon atonicity of the brain, occasioned by too continuous and prolonged mental application. Previous to my use of the air-bath, I found this affection to be one of the most inveterate I had to treat; but now with the aid of compressed-air, I can cure it with greater certainty and much more rapidly.

“I may add, that, with all these striking advantages, there is no danger connected with the use of the air chamber. DURING THE WHOLE PERIOD I HAVE HAD IT IN OPERATION, I HAVE NOT SEEN ONE PREJUDICIAL EFFECT ARISE FROM ITS USE.

“I shall now proceed to the points on which you wish somewhat more detailed information. The first and chief of these is *my treatment of Phthisis*.

“For practical purposes, I may divide Phthisis into three sections:—

“1. That in which the parents of the patient, although weakly, are not consumptive.

“2. That in which the disease first made its appearance in the parents or grand-parents of the patient.

“3. That in which the disease has been continuous for several generations in the family of the patient.

“I believe the curability of consumption to be great in those cases which belong to the first class. In such cases, cures are effected even when cavities have been formed in the lungs, and after a half or even three-fourths of one lung has been seriously diseased.

“In the second class, a cure is to be looked for, only when the disease is limited to a small portion of one lung. In that case, it may be accomplished even after a cavity has been formed. If, however, the deposit of matter has taken place to any extent, a cure is rarely effected; and the physician's principal aim must be to retard, or, if possible, entirely stop, the further progress of the disease.

“I believe the third class of phthisis to be incurable in all its stages. Its progress may, by judicious treatment, be very much retarded, but that is all that can be effected.

“The compressed-air bath produces three very marked effects in phthisis. It lessens very materially and rapidly the amount of mucopurulent matter secreted by the air tubes, or by cavities situated in the lungs, and stimulates these cavities gradually to diminish in size, and at length entirely to heal up; it removes congestion of the lungs, and diminishes greatly the tendency to pulmonic hæmorrhage, and it causes the re-absorption of the tubercular matter which has been deposited in the air vesicles and tubules of the lungs. The process of absorption is as

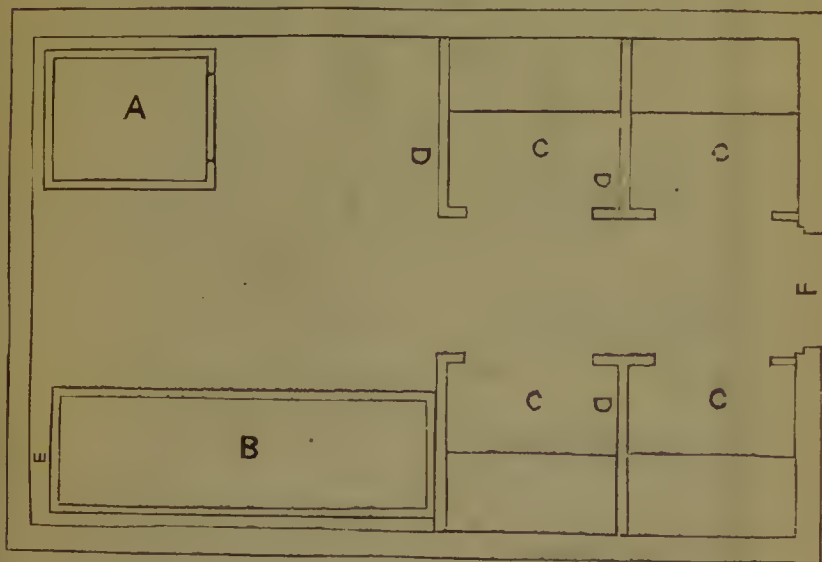
follows. There is at first no respiratory sound heard in the portion of the lung, the only breathing sound being bronchial. After this a slight râle is perceived, somewhat similar to that produced during the process of resolution to health of a dense pneumonic lung. The râle is however coarser, and gives the sensation of a thicker fluid than in the case referred to. This râle continues slightly to increase for a few days, when it gradually diminishes, and at length entirely disappears, to be replaced by the fine, soft, respiratory murmur of health. This power of the compressed-air bath to cause absorption of tubercular matter deposited in the lungs is a very important fact, and fully warrants us in anticipating still greater results than those we have already gained from its use.

**“Chronic Bronchitis.** This disease, when severe and of long standing, is one of the most stubborn the physician has to treat: indeed, it is usually understood and acknowledged, that the patient must carry it with him to his grave. Now, however, with the compressed-air bath, and the regulated use of water, this disease is comparatively easily cured. Indeed, I feel that I can with full confidence assert that *all* cases of chronic bronchitis are curable, provided they do not occur in very aged persons. The local application of water to the chest produces very powerful results, while at the same time it greatly invigorates the frame and lessens the tendency to taking cold. Nothing so much astonishes patients labouring under chronic bronchitis, when under treatment here, as the ease and freedom from danger with which they can lessen their amount of clothing, and expose themselves to the invigorating upland breezes of the mountain, midway up whose height Ben Rhydding stands.

“I know of nothing which shows so well the power of the compressed-air bath in toning relaxed mucous membranes, and in lessening increased secretions from their surface, as chronic bronchitis. I have seen it, within fourteen days, diminish to one half the amount a profuse mucopurulent secretion, which had lasted for twenty years, and within three months cause the entire morbid secretion to disappear. These salutary results are produced without any injurious consequences. The great danger of removing a chronic expectoration has become a proverb amongst us. But when the stoppage of expectoration is produced by the combined use of water and compressed-air, no such danger can follow. The therapeutic use of water invigorates the frame, and increases the free circulation of blood through the skin, and so removes or prevents congestion of any of the internal organs. The compressed-air bath, while it overcomes the increased muco-purulent secretion, lessens the relaxed and softened state of the mucous membrane, enabling it to absorb the oxygen of the atmosphere more freely than it had previously been able to do. It also removes pulmonic congestion; and, moreover, as the same bulk of compressed-air contains at least one-third more oxygen than it does when not compressed, the functions of the lungs are enabled to go on with proportionably greater freedom.” (*There are a number of cases of cure by the compressed-air bath, in the pamphlet.*)

# FLANNEL BODY BANDAGES AND CHEST COMPRESSES.—

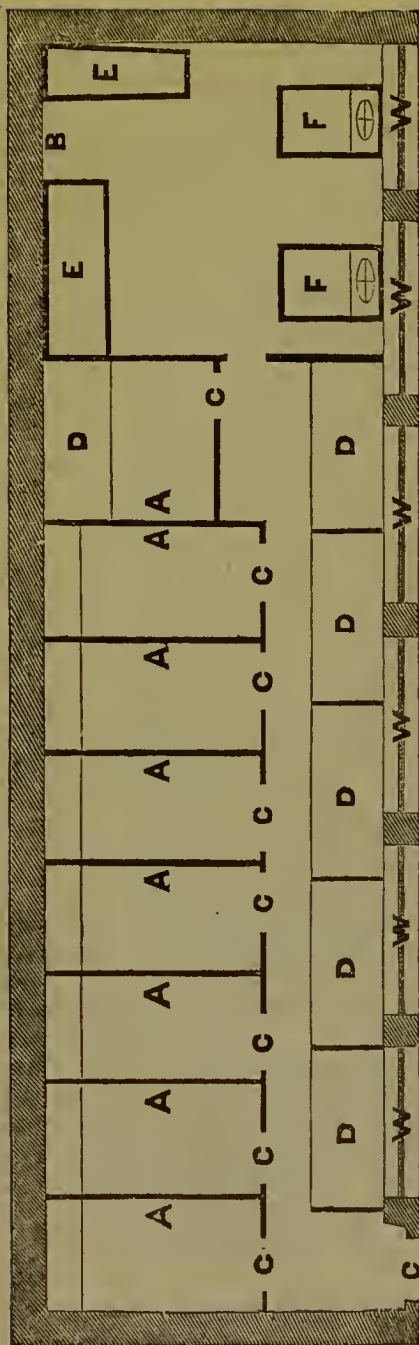
We now adopt, for delicate eases, a flannel end instead of ealio to body bandage, page 57, the flannel end double. Wring the flannel end out of eold or tepid water thoroughly; unless it is well wrung it will drip and be uneomfortable. This is a very important improvement; we have been able to get on with eases who eould not even bear the ealio bandage. Chest eompresses, oiled silk, lined with flannel, and the flannel wetted are very light and eomfortable.



Plan of one of the Bath-rooms for my Free Hospital, and in which many hundreds have found cure or relief. A is a steam box, as at page 322; B is a wood shallow, as at page 54; C are dressing boxes; D, partitions with boards 6 feet high, doors are unnecessary; E, entrance; over the shallow bath B, is a douehe.

In my house, for private use, I have a bath-room; simply a bath, as at page 52, with hot and cold water-pipes into it. In this may be had hot or eold bath, or douehe, and next to it is a wood box, 8 feet by 6, and six inches deep, lined with zine, on the zine is a wood grating, and an outlet from the box for water to pass off; standing on this grating a dripping sheet or running sitz ean be had with comfort; a bed for packing in the same room makes all complete. In this room numbers of our friends have been cured or relieved or refreshed after weary travel.





PLAN OF ONE OF MY BATH ROOMS.—This is very convenient, but might probably be improved by having more width, as we were confined to a certain size from it being under the saloons. The scale is quarter of an inch to a foot. A are dressing boxes, the partitions being about 5 feet 9 inches high, and a door at C; and where the figures A are, there is a tap with hot water and one with cold. D are the beds for packing and fomenting; B is a gutta percha pipe for spouting; E E are wood shallow baths, as at page 321; F are steam boxes, as at page 322; G is the door-way; and W are the swing windows.

## CASE OF CHILDBIRTH.

*"To the Editor of the Derby Telegraph.*

"DEAR SIR,—Having seen in your paper, some time ago, an article on your visit to the Matlock Bank Hydropathic Establishment, and gathering from its tenour your appreciation of the treatment there practised, which you appear to have published for the benefit of those who may be disposed to become acquainted with the treatment, and have need of the blessings which, in judicious hands, in so many cases it has been the means of communicating,—having the same object myself in view, I am disposed to think you will favour me with the insertion of a few remarks (which I judge will be interesting and instructive to many) relative to an extreme case of dysentery, which after other means had failed was brought round by Hydropathy.

"My wife had been brought to bed about nine days when her nurse allowed her to go out of doors, where she took cold. The first unfavourable symptoms were cold shiverings, which were succeeded by diarrhoea. The Allopathic doctor who had been attending her was at once resorted to; medicines were administered, but appeared only to aggravate the malady, producing dysentery, and the irritation was so extreme that about every half-hour the bowels were opened. This continued for about four days. I next sought the aid of a Homœopathic physician, who when he saw my wife, pronounced her case hopeless! said she could not be worse! I then asked him about the propriety of trying Hydropathy in its mild forms, but he thought it would be in vain. I happily knew to some extent the various applications used in this treatment, and their result upon the system, but in such a case, and under such circumstances, was afraid to try them, especially as I was left to my own resources to adopt the judicious means which in her case were manifestly needed. Having, however, commended my patient as well as the means to God, and sought his blessing, I fomented the bowels (which were racked with pain) for nearly an hour; after which I gave a pack, with sheet wrung out of warm water, for about forty minutes; after that a warm dripping sheet. She was then well dried and got into bed as quickly as possible, and so covered as to produce comfortable heat. Shortly after this a body bandage was applied to the bowels, this was about mid-day. In the evening the foregoing process was repeated, keeping cold cloth to head while in pack, and hot water bottle to feet. The next day similar treatment was given, when an improvement was visible; the bowels easier, the pulse lower, and the whole system soothed. By this time the doctor called again, and was utterly amazed at the change—asked what I had done, and commended my perseverance in the use of such means. My wife's appetite was now returning, and the bowel irritation subsiding. Several other mild applications were used for the next two or three days, when she was quite convalescent; after which nothing more than the tepid sitz and body bandage were used, when in about seven or eight days I had a perfect cure. I shall withhold my name and address from this letter, but send you my card, and you are quite at liberty to give it to any one

who may write to you for the same, and I would gladly communicate with them. Yours very respectfully,

"A CONVERT TO THE WATER CURE."

**RELIEF IN A DYING CASE.**—An old man, named Froggatt, Matlock Bank, sent for me last week: I found him dying in great agony, and calling upon God to take him out of his misery. Decay of the vital organs had come on gradually from old age, and from having in former years smoked tobacco and taken stimulants. I saw that by our plans, which I have named at page 146, relief could be given. I ordered a bath-man to go with a pair of fomenting pads and a fomenting can, and some sal-volatile, or spirits of ammonia. The man was fomented, as at page 46, gently for one hour, mustard plaisters to his feet, and then feet and legs wrapped in flannel; after this a spongio piline full size chest compress was put on, sprinkled with hot water. The fomentation gave immediate relief, and the man had no more pain while he lived, which was until the following day. He slept several times. A little ammonia was given in water, and only water to drink.

**INJURIOUS EFFECTS OF SMOKING.**—S. Solly Esq., F.R.S., the eminent surgeon of St. Thomas's Hospital, Borough, has lately delivered a very important Lecture on Paralysis, before the Students of that excellent institution, in which smoking is pointed out as one of the various and insidious causes of general paralysis. After condemning the immoderate use of malt liquors or spirits, which only stimulate for a time, and afterwards produce the most enervating and pernicious effects, the lecturer proceeded—"There is another habit also, which I cannot but regard as a curse of the present age—I mean smoking. Now don't be frightened, my young friends, I am not going to give a sermon against smoking, that is not my business; but it is my business to point out to you all the various and insidious causes of general paralysis, and smoking is one of them. I know of no *single* vice which does so much harm as smoking. It is a snare and a delusion. It soothes the excited nervous system at the time, to render it more irritable and feeble ultimately. It is like opium in that respect, and if you want to know all the wretchedness that this drug can produce, you should read the 'Confessions of an Opium-eater.' I can always distinguish by his complexion a man who smokes much, and the appearances which the fauces present is an unerring guide to the habits of such a man. I believe that cases of general paralysis are more frequent in England than they used to be, and I suspect that smoking tobacco is one of the causes of that increase."

**WEARING MUCH HAIR** on the head, and especially at the back of the head, is very injurious to any with much mental employment, or any delicate persons. I have frequently noticed this in the case of Ministers of the Gospel; to them it is often a cause of suffering without their being aware of it. Take a case of any serious attack in the head, the doctor immediately orders all the hair to be cut off and the head shaved the very first step; this shows the importance he attaches to relieving the head of covering when the brain is affected: and in a degree, by much mental work, there is a constant tendency to excitement there. The hair should be cut quite close at the back part of the head.

**STEWED APPLES AND PEARS** are a very wholesome and valuable article of diet. The way we prepare them is as follows: Pare the apples or pears, do not slice them, but put them whole into an earthen jar with a little cold water, and sprinkle some crushed sugar over them; cover up and let them stew gently for an hour or so, taking care the water does not boil or become hot enough to reduce the fruit to a pulp; this requires watching. A few grains of cochineal in a linen bag in the water gives them a beautiful colour and does no harm. The best pears for stewing are the common large hard bell-pears, they will keep fit for stewing all winter. Our invalids have found these apples and pears a very great luxury in winter and spring, when fruit is scarce.

**FIRST IMPRESSIONS OF MEDICAL PRACTITIONERS** on seeing the principles of Hydropathy carried out at an establishment where they see cases much the same as at their established hospitals.

I have had medical practitioners, and amongst them several physicians, who have come without prejudice to see for themselves upon what principles Hydropathic practitioners assume to act. The medical profession generally look with contempt on our practice, believing we have no distinct line of principle for the basis of our treatment, such as they have in their counter-irritants, their soothing narcotics, their mixtures for causing changes in the components of the blood and the tissue, &c.

But when they come without prejudice to examine into our mode of practice, they soon see we have a basis and a principle to act upon, and that we do not give this or that bath or wash over, hit or miss, to produce some result as likely to do harm as good. No! every man of good principle will take care he has a clear conviction in his own mind, and the truth of that confirmed by results before he will tamper with the life of his fellow-creatures, or betray their confidence. If he has no clear defined principles upon which he can act with confidence, then he is guilty of a great social sin in acting at all.

My medical visitors have again and again questioned me on the principles I act upon in the case of fresh patients coming in; I gladly answer their questions, and am rejoiced to see them that they may investigate for themselves, and I never shun questions, having nothing to conceal; if a case comes to me that I cannot see my way in, I am ready, and feel bound in principle to acknowledge it, but these are rare indeed.

The grand starting point is to ascertain what the life of the organic body consists of, and where it is. Every medically educated man will say at once it is not in the blood, it is not in the muscle, nor in the bones, nor in the matter of the brain, nor in any organic matter of the body; but it is the *vis vitæ*, the power of life developed in the nervous system: cut certain nerves, and the gastric juice will no longer be secreted to dissolve the food: lower the vitality of the organic nerves of the stomach, and the healthy assimilation of its contents is stopped; the same by the liver, it is no longer able to draw impurities out of the blood, or manufacture its saccharine matter and red corpuscles. Lower the vitality of these nerves in the bowels and kidneys, and the *fæces* cannot be retained, nor the urine; the vital power that holds all in order and gives life



is wanting, and so, as I have before remarked, the nervous fluid or electricity, or whatever it may be designated, is the life of the body, without it the substances of the body soon decay and dissolve; with it in strength, all is life and vigour. Now, when we have disease to contend with, whether in a lower or higher degree, this vital power is under par. Our aim is to raise it, and that can only be accomplished through one channel, and that is the stomach and the blood. No practitioner can cure any ailment or any wound or any disease, but by making better blood, and better blood cannot be made but by the influence of these nerves. Now, by applying as we do to the surface of the body, we set the most powerful engine for purification at work in the whole frame: the skin, with its seven to eight millions of pores, and its miles of corkscrew sebaceous and sudorific glands we purge through, and thus relieve the frame of morbid matter which is oppressing the delicate organic nerves; we take away at once the offensive matter which is sickening the whole frame. The allopaths to accomplish this must put stuff into the stomach they know is an outrage upon its structure and functions. They have to trust to its bearing this trial in order to reach other organs congested or inflamed; they give opiates to give sleep and allay pain, they dare not leave the patient twelve hours without a purgative to endeavour to rouse the nerves they have partly paralyzed. Thus in the physicians' prescriptions pil hydrag is always associated with opiates, one to counteract the mischief the other causes, and this with such certainty that the doctor always gives them together.

The blue pill over night, which so lowers the power of the nerves and stimulates the liver to make every effort to expel it again, is accompanied next morning by a black draught to whip the poor bowels to expel their contents, without any consideration of their proper and natural office: and so it is with setons, blisters, and issues and the rest of the inventions for forcing nature to do what the doctor wishes, but in which the poor patient always comes off a loser, present or future; all is war against the frame and its functions.

All our treatment is immediately comforting to the body, with the exception of mustard plaisters, and those never produce any after evil results. We produce counter irritation by our fomentations and our bandages and our hand rubbing. The bandages and fomentations comfort and soothe the nerves, the bandages determine blood to the viscera, and keep it there to give life and action to the liver, stomach, and bowels; and so by all our appliances. This system must succeed eventually because it is founded on principles of reason and truth, which allopathy is not, by the shewing of its own professors.

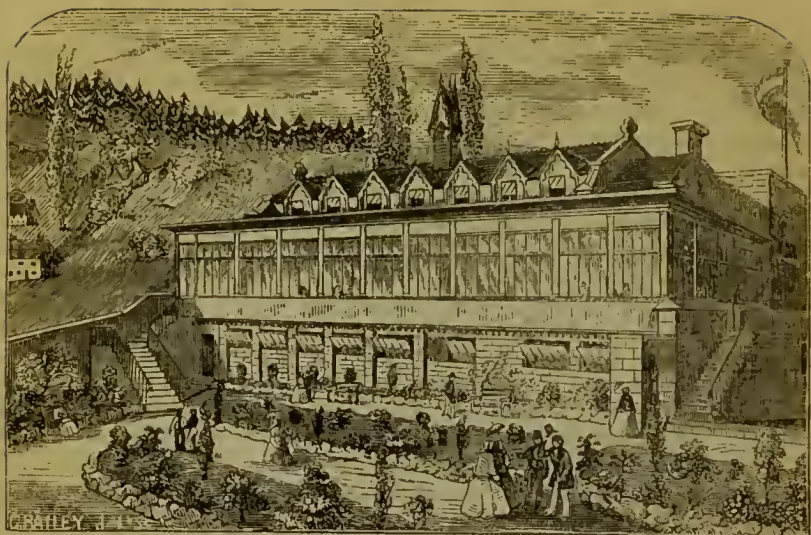
**MILK FEVER.**—We were called in to the case of the wife of a labourer, aged about twenty-four, who was in a raving state of madness from this complaint; it required several strong persons to prevent her injuring herself or them. During a rather lucid interval a vapour bath was given, with legs in hot mustard bath, and cold cloth over the head, and a hot pad to stomach; some relief was instantly felt. After being in the vapour fifteen minutes she was sponged over with sponge partly wrung out of water nearly cold, a wet body bandage was put on, mustard plaisters to the soles of the

feet, cotton socks wrung out of tepid water and dry woollen over, the legs and arms packed with strips of wet calico with dry over, and dry flannel over all; in four hours this was repeated. She got some rest by having a hot fomenting can applied over her bowels. Next morning wet pack half an hour, and again in the afternoon. This treatment repeated, she had no relapse from the first application, but soon got entirely well, and had abundance of milk. Hydropathic practice in these cases is unrivalled. We have heard of a similar case a short distance off, which was entirely lost by the medical attendants not being able to cause perspiration. Unfortunately for Allopathic practitioners, they have to begin by sickening the stomach with their drugs before they can get their compounds into the blood, and when the stomach will not act they are fast, and the case is hopeless. By our instant application to the skin, with its seven or eight millions of pores, we purge the system, and not only do not sicken the stomach, but we draw away morbid matter from it, and relieve it. These vapour baths were given with merely a can of boiling water, and a hot brick put in, the patient sitting on a chair enveloped in blankets, and the can put under the blankets.

LEG BATHS.—We find immersion in water just comfortable, say 85 or 90 degrees, for forty-five minutes, two or three times a day, highly beneficial in cases of erisis in the legs, or when the legs are inflamed from any cause.

#### APPLICATION OF HYDROPATHY TO CATTLE, &c

Hydropathy is quite as successfully applied to animals as to the human frame, and when the prejudices in favour of physic, bleeding, and blistering are removed, it will be extensively practised. I have used it with entire success for the last five years in various cases with my horses, cows, and pigs when the usual modes have proved unavailing. One instance has just occurred. Mr. Bown, farmer, of Birchwood, near Alfreton, a friend of ours, sent his man over to me saying he had a cow down of the milk fever. I sent my man over immediately; he found the animal breathing with great difficulty. First, a blanket was dipped in hot water, wrung out, and wrapped round the animal's body, and especially round the elder, then macintosh sheet over to keep in the heat,—(this should be done quickly) if no macintosh sheet bed rugs would do, so that enough are put on to keep the heat in. This was kept on one hour without removing. Re-dipped the blanket in hot water, and so kept on fomenting for two hours, then washed over with cold water and well rubbed dry. Then gave a wet pack with sheet wrung out of cold water wrapped round the body, then dry rugs or sacks, and the man to place a bed on the whole as the animal lay down. In pack one hour and a half, then washed her down with cold water and rubbed her dry. The cow gave six quarts of milk and was quite relieved. Let the cow rest and fomented again at night, and again next morning, when she was taken out in the field for exercise and brought back into the barn. During the whole time put dry rugs over the body when not fomenting and in a warm place with plenty of straw. The cow was quite well the third day. Similar fomentation to pigs has often saved them when given up.



\* MATLOCK BANK  
HYDROPATHIC ESTABLISHMENT.

Near Matlock Bridge Station, Derbyshire.

ABOUT 16 miles from Derby, situation highly advantageous for health, entirely sheltered from north and east winds, soft water of the purest kind, and all necessary apparatus for carrying out the treatment. House comfortably furnished, strict attention paid to the comfort of the patients; pecuniary emolument not the object of the Proprietor, as the charges will show. At this Establishment pure Hydropathy is practised on the principles of mild and rational treatment, in accordance with the requirements of constitutions weakened by the effects of ill health or disease, (which cannot bear violent and sudden shocks without great risk,) and his uniform success in curing or relieving a large number of cases, confirms the Proprietor in his convictions that this is the only principle on which Hydropathy can be safely and efficaciously practised. A thorough knowledge may here be gained of the domestic application of Hydropathy, and general personal management as regards baths, diet, clothing, &c., &c., so as to meet all the contingencies of life. There is not the slightest risk to the most delicate constitution, and the treatment is applicable to every ailment the body is liable to. The beautiful scenery of the locality is well known; Matlock Bath, Chatsworth, (Duke of Devonshire's,) Haddon, (Duke of Rutland's,) and the Peak, are all within easy distances. The principal saloon is lofty, 66 feet long, and the whole front glass; and an outer saloon, 95 feet long, also glazed, so that the inmates are independent of the weather for exercise. The new baths, with separate private bath boxes, are models for Hydropathic baths. A number of new bedrooms have been added, and the whole Establishment made as comfortable as possible, without regard to expense.



Hydropathic treatment is peculiarly applicable to the cure of Nervous Debility, Spinal Irritation, Congestion of the Brain, Paralysis, Indigestion, Incipient Consumption, Liver Disease, Asthma, Sleeplessness, Mercurial Affections, Skin diseases, Tie-Doloreux, Rheumatism, Gout, Apoplectic Fullness, Constipation, Piles, and various other acute and chronic affections, and in all cases of female complaints, unrivalled for efficacy, and for the absence of all painful or disagreeable applications. Much apprehension having arisen in the minds of persons respecting the severity of the water treatment, it is important the public should know that the temperature of the water is adapted to the general state of health of the patients, and at this Establishment cold water is only applied in cases where the constitution is sufficiently strong to bear it.

Ladies can correspond with Mrs. Smedley, who also personally attends their baths.

The Establishment was at first only intended to accommodate a few patients who were not eligible for treatment at his two Free Hospitals at Lea Bridge, and who could not afford to go to Establishments such as those at Malvern or Ilkley, where the expense is £17 for the first month, all charges included, and not far short of that rate afterwards. The charges at this Establishment were fixed with the intention of just covering the expenses of management, rent, and wear of apparatus and furniture. This the lower terms do not cover, and for the sake of those who are unable to pay more the Proprietor does not regret it. During the last year, from the unequalled success of the mild and new means used, many patients in good circumstances, and some wealthy, have had the benefit of the baths at the same charge. This the Proprietor does not consider reasonable, as he has patients who are not able to pay even the moderate charge made, and some whose means are exhausted in a shorter time than is necessary for their cure, and who are allowed to stay at a reduced rate, or free of any charge, in order that they should not lose the benefit of the treatment.

One reason why the moderate terms do not meet the expenditure is, that during the winter months the weekly receipts from patients seldom cover the payment of wages and food, and the Establishment staff cannot be discharged and got together again for the summer and autumn. Winter is the best time for treatment for nearly all cases of invalids.

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**TERMS AND RULES.**—Advice, board, lodging, baths and attendance, with sheets and blankets for baths, 6s. 6d. per day, when lodging in the Establishment; and 5s. 6d. per day out.

In making the above advanced charges, the Proprietor does not intend to shut out that class of patients for which the Establishment was first opened; but thinks it better to have the opportunity of reducing the terms in the cases of patients who are unable to pay more than the old terms of 4s. 6d., rather than advancing the terms to patients who are in more affluent circumstances. It will, therefore, be necessary for persons wishing to become patients in the Establishment, and who are unable to pay the higher terms, to apply by letter, giving the nature of their cases, and



their circumstances, to Mr. Smedley, who will consider such cases, and reply accordingly. No fees whatever.

Children under 14 years of age, 2s. 6d. per day.

Rectified naphtha, for spirit lamp baths 3d. per bath; spirits of wine, 9d. Mustard for foot baths, and a few bandages of trifling value, charged extra.

Any patient unable to dress or undress, or requiring more than the usual attendance, must hire assistance (which may be obtained in the neighbourhood at a very moderate charge,) for a few hours each day.

No books, newspapers, or tracts, of an irreligious character, allowed, nor any newspapers on the Sabbath.

The use of tobacco or snuff, in any way, is highly injurious, and strictly prohibited. All stimulating beverages disallowed, and all kinds of physic, however simple in their nature or small in quantity.

SIX HUNDRED PATIENTS have been under treatment during the past year, 1857, and references can be given to persons residing in most of the large towns in England, and to some in other countries, among whom were a number connected with the ministry and the medical profession, or patients recommended by them. About thirty patients are accommodated with lodgings in the house at one time; all above this number are provided with lodgings near the Establishment.

The Establishment is strictly closed to visitors (whether friends of patients or not) on the Sabbath, or to patients arriving.

CAUTION.—Patients, on leaving the Establishment, should not wear the wet body bandage for weeks and months together, without advice; it may be worn with great advantage a few days at a time when the stomach is out of order, or when a person has a great deal of fatigue to go through it will be found useful worn during the day.

DIET.—*Breakfast*: black tea, cocoa, bread and butter, eggs, cold boiled bacon, and Scotch oat-meal porridge, with sugar and milk.

*Dinner*: varied every day, consisting of roast and boiled mutton, roast beef, fillet of veal, lamb, cold ribs of beef, cold round of beef, rabbits, fish. Vegetables: potatoes, French beans, peas, cauliflowers, carrots, &c., with pure water to drink; followed by rice, sago, vermicelli, tapioca, flour and apple puddings, cold ground rice in moulds, stewed apples, rhubarb, &c.

*Evening meal*: same as breakfast, except eggs.

Syrup is taken frequently at Hydropathic Establishments, and is generally injurious.

Some slight refreshment before dinner and after the evening meal is allowed to delicate patients, or any requiring it.

The bread used is made of superfine flour with a little bran added, and fermented with home made yeast. White bread is also on the table.

HOME MADE YEAST.—One pound of malt, one ounce of hops, boiled in six quarts of water two hours; strain it, and when nearly cold, add half a pint of the yeast from last making, mixed with a table-spoonful of flour, and one ounce of salt. Keep it near the fire all night, closely covered to ferment, and bottle it in the morning before it is quite cold. The yeast put in a cool place will keep good six weeks at least, in stone bottles closely corked and tied.

Some public-house yeast may be used for the first making, afterwards save some to make a fresh quantity with.

**BATH ROOM RULES:** *Important to be attended to by Bath-Attendants and Patients.*—No hot baths to be given on any account without using a Thermometer.

No hot water bath to be above 90 degrees on the patient first entering it, or more than 100 afterwards. Wet head bandages always to be kept on while using hot baths.

The Bath-Attendant not to leave the side of the bath on any account while the patient is in hot water, vapour, or spirit-lamp bath.

If a patient in a wet pack does not feel warm in it, to be taken out, and a gentle vapour or hot sheet applied, and stop packing until more vitality. If the feet are cold, a hot water bottle to be used, and a wet napkin to the head.

In all cases it is necessary to have the feet in hot water while in the steam bath, spirit lamp bath, or douche, and in delicate cases, when in the sitting bath, to prevent determination of blood to the head. The success of the treatment mainly depends upon attention to all these subsidiary appliances, and it is sometimes owing to practitioners not having patience and perseverance in these minutæ that the treatment fails.

If a patient is at all faint in a hot water or vapour bath, to come out immediately.

Be careful not to let the douche fall on the head or chest; douche never longer than while forty may be counted, except when specially ordered; generally less, especially if the patient is weak, or the weather cold.

Patients should have two bandages at least for change. If the feet are cold at night to wear cotton socks wrung out of tepid water, and lambs' wool socks over them.

The Proprietor's newly invented running Sitz Bath, for ladies, which can be used without undressing, can be purchased at the Establishment, as also his newly invented fomenting cans, compresses, general Sitz Baths, &c.

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**ROUTES TO MATLOCK BRIDGE STATION.**—From London and places south of Derby, book to Derby, and there take a fresh ticket to Matlock Bridge Station,\* changing carriages at Ambergate Station, about 10 miles north of Derby.

From Birmingham, Gloucester, and places west of Derby, same as from the south.

From Lincoln, and places east of Derby, *via* Nottingham to Derby, and as before.

From Edinburgh and the north, *via* Thirsk and Leeds to Ambergate, changing carriages at Ambergate, and taking ticket for Matlock Bridge.

From Manchester, by Sheffield and Lincolnshire Railway, *via* Eckington to Ambergate, thence to Matlock Bridge as before; or by Coach from the Commercial Inn, Market Street, Manchester, at 11 30, to Rowsley, and thence by rail (six miles) to Matlock Bridge. The latter is the cheapest and quickest route from Manchester.

\* *Not Matlock Bath Station.*

The following is a table of most of our applications. The figures refer to my prescription books to save the repetition in giving particulars of every bath.

- 1 Cold dripping sheet.
- 2 Hot and cold sheet.
- 3 Hot and cold sheet, and dry mustard rub.
- 4 Dry mustard rub over only.
- 5 Hot sheet and tepid sponge over.
- 6 Two cold sheets.
- 7 Sponge over, tepid.
- 8 Soap over and cold sponge.
- 9 Spongo over with sponge squeezed out of tepid.
- 10 Sponge over with sponge squeezed out of cold.
- 11 Hot sheet and douche.
- 12 Hot sheet and cold shallow.
- 13 Cold shallow.
- 14 Hot Shallow 100 deg. 10 minutes and cold sponge.
- 15 Soaping in ditto
- 16 Sitz, hot, 100 deg., hot pad over back of bath, one over chest and bowels, and feet in hot, keep arms well down in water, and have blanket covering, with the head out ten minutes, and after cold sponge or cold sheet.
- 17 Sitz, cold, 10 minutes.
- 18 Ditto, 70 deg. 5 minutes and three cold.
- 19 Ditto, cold running 5 minutes.
- 20 Ditto, 80 deg. 8 minutes, run down to cold 2 minutes.
- 21 Ditto, hot pad to chest 8 minutes, feet in hot.
- 22 Ditto, 70 deg. 15 minutes, and 3 cold.
- 23 Ditto, 90 deg. 10 minutes, run down to 70.
- 24 Sitz, Ladies, cold.
- 25 Ditto, ditto, cold running.
- 26 Ditto, 70 deg., and 1 cold running.
- 27 Wet pack usual, only to calves of legs.
- 28 Fomenting pack, hot pad behind and before, and hot can.
- 29 Ditto, no hot pad behind.
- 30 Body pack.
- 31 Towel pack.
- 32 Liver pack. fomenting under right ribs and stomach for 20 minutes gently, then rub trunk dry, then mustard plaister as long as it can be borne over liver, wipe it off with soft paper or dry towel, and not with damp, then cover up with and lay hot fomenting can over it for 10 minutes, then dry rub the part, and and over stomach and bowels with dry mustard, put on dry body bandage.
- 33 Dry foment. Hot can to front of body, over one or two folds of blanket 25 minutes.
- 34 Back wash, sit over sitz bath with cold water in dip towel in water, and draw it over the back 4 minutes.
- 35 Ditto, hot and cold. Have two towels and a can of hot water, and alternate hot and cold towel; sit on hot pad and feet in hot water.
- 36 Spinal rubbing, cold, sitting over sitz and blanket in front.
- 37 Ditto, with hot mustard.
- 38 Ditto, sitting in cold sitz.
- 39 Sitz cold, and spinal rubbing.
- 40 Throat pack with wrung out towel and flannel wrapper.
- 41 Ditto, with flannel wrapper wrung out of hot water, and dry over it.
- 42 Wet pack legs only, with usual thick cotton sheet, each leg separately, then blanket, then macintosh sheet.
- 43 Foment pack to legs only, with hot pads, dry blanket, and macintosh sheet.
- 44 Mustard plaister to soles of feet.
- 45 Fomentation to chest, stomach, & bowels one pad in front, then dry blanket and hot can over, afterwards wipe with sponge squeezed out of cold water; do not cover up to cause perspiration over all the body.
- 46 Ditto, sponge squeezed out of tepid water.
- 47 Hot foment, pad to back, and one to front, dry blankets, then hot can and macintosh sheet.
- 48 Bowel foment, for diarrhoea. Feet in hot mustard four minutes while undressing, then wrap body in blanket, lay down, and put hot can over bowels, and cover up, sipping cold water, feet wrap in hot flannel or blanket; remain in till pain is gone.
- 49 Steam bath six or eight minutes, and cold sheet.
- 50 Ditto, and sponge over with water 70 deg.
- 51 Ditto and cold shallow.
- 52 Ditto, and shallow, 70 deg.
- 53 Spirit lamp.
- 54 Foot bath, stamping in cold water to ankles
- 55 Hot foot bath, six minutes, then cold three minutes.
- 56 Hot mustard leg bath.
- 57 Ditto and hand bath.
- 58 Mustard plaister to throat and chest, first foment fifteen minutes, then mustard plaister, wipe off dry and put on dry bandages.
- 59 Head bath 70 deg. fifteen minutes, & one cold, foot bath cold or tepid after.
- 60 Mustard foot bath, 100 deg.
- 61 Ditto hand bath.
- 62 Dry rub over with hands only, covering body with blanket, feet on hot pad, half rub over the upper part of the body with wrung out sponge in bed, put on flannel vest, &c., and then sponge over lower part.
- 63 Mustard plaister to throat and top of chest, wipe off dry, and put a wrung out napkin, and dry flannel wrapper over it all night.
- 64 Leg bath 90 deg. 45 minutes, for inflamed or sore legs.

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